Археолошки институт Београд *Књига LXXIII/2023.*

СТАРИНАР



На корицама: Локалитет Велика хумска чука, огрлица из оставе откривене приликом ископавања 2022. године, 15–14. век пре н.е. (Народни музеј, Ниш)
фото: Петар Милојевић; цртеж: Александар Капуран

Sur la couverture : Localité Velika humska chuka, un collier provenant d'un trésor découvert lors de fouilles en 2022, 15–14. avant JC (Musée national, Niš)
Photo : Petar Milojević ; Dessin : Aleksandar Kapuran



АРХЕОЛОШКИ ИНСТИТУТ БЕОГРАД

INSTITUT ARCHÉOLOGIQUE BELGRADE

UDK 902/904 (050)
ISSN 0350-0241 (Штампано изд.)
ISSN 2406-0739 (Online)

INSTITUT ARCHÉOLOGIQUE BELGRADE

STARINAR

Nouvelle série volume LXXIII/2023

BELGRADE 2023

АРХЕОЛОШКИ ИНСТИТУТ БЕОГРАД

СТАРИНАР

Нова серија књига LXXIII/2023

БЕОГРАД 2023

СТАРИНАР
Нова серија књига LXXIII/2023

ИЗДАВАЧ
АРХЕОЛОШКИ ИНСТИТУТ
Кнеза Михаила 35/IV, 11000 Београд, Србија
e-mail: institut@ai.ac.rs
Тел. 381 11 2637191

СЕКРЕТАР РЕДАКЦИЈЕ
Ана ГАВРИЛОВИЋ, Археолошки институт, Београд

ЛЕКТОР ЗА СРПСКИ ЈЕЗИК
Александра ШУЛОВИЋ

ЛЕКТОР ЗА ЕНГЛЕСКИ ЈЕЗИК
Дејв КАЛКАТ

ГРАФИЧКА ОБРАДА
Данијела ПАРАЦКИ и D_SIGN, Београд

ШТАМПА
БИРОГРАФ, Београд

ТИРАЖ
400 примерака

СЕКУНДАРНА ПУБЛИКАЦИЈА
COBISS

Учесталост излажења једна свеска годишње.

STARINAR
Nouvelle série volume LXXIII/2023

EDITEUR
INSTITUT ARCHÉOLOGIQUE
Kneza Mihaila 35/IV, 11000 Belgrade, Serbie
e-mail: institut@ai.ac.rs
Tél. 381 11 2637191

SECRÉTAIRE DE RÉDACTION
Ana GAVRILOVIĆ, Institut archéologique, Belgrade

LE LECTEUR POUR LA LANGUE SERBE
Aleksandra ŠULOVIĆ

LECTEUR POUR LA LANGUE ANGLAIS
Dave CALCUTT

RÉALISATION GRAPHIQUE
Danijela PARACKI & D_SIGN, Belgrade

IMPRIMEUR
BIROGRAF, Belgrade

TIRAGE
400 exemplaires

PUBLICATION SECONDAIRE
COBISS

The Journal is issued once a year.

Часопис је објављен уз финансијску помоћ
Министарства просвете, науке и технолошког развоја Републике Србије

Ce périodique est publié avec le soutien du
Ministère de l’éducation, de la science et du développement technologique de la République Serbie

САДРЖАЈ – SOMMAIRE

РАСПРАВЕ – ETUDES

ПРЕГЛЕДНИ РАДОВИ – ARTICLES SOMMAIRES

КРИТИКЕ И ПРИКАЗИ – COMPTES RENDUS

UDC: 903"634"(497.11)
903:63"634"(497.11)
902.2(497.11)

https://doi.org/10.2298/STA2373007F
Original research article

DRAGANA FILIPOVIĆ, University of Kiel, Institute for Pre- and Protohistory, Kiel
MIROSLAV MARIĆ, Serbian Academy of Sciences and Arts, Institute for Balkan Studies, Belgrade
NENAD TASIĆ, University of Belgrade, Faculty of Philosophy, Department of Archaeology, Belgrade

HIGH HEAT ON THE TELL: AN ARCHAEOBOTANICAL VIEW ON HOUSE BURNING AND SOCIOECONOMIC RELATIONSHIPS AT THE NEOLITHIC VINČA SITE (SE EUROPE)

e-mail: drfilipovic12@gmail.com

Abstract. – Buildings destroyed by fire are frequently discovered at sites of the Neolithic Vinča culture of south-eastern Europe. The social context and practical aspects of prehistoric house burning have long been studied through the analyses of architectural and artefactual remains and through experimental building and firing of wattle-and-daub structures. In contrast, very few studies have used the remains of plant foodstuffs from within and under the house rubble to address the cultural and technical particulars of this widespread tradition. At the Neolithic Vinča tell, several burnt buildings preserved hoards of wild pear and emmer grain, along with minor traces of other plant foods. Three of these burnt buildings date to the final decades of the Neolithic Vinča settlement, whose dissolution and abandonment seem to have been abrupt and continue to puzzle archaeologists. We examine the find-context and morphological characteristics of the wild pears and emmer and use our observations to discuss whether the burning was deliberate or accidental. Based on the archaeological and other available evidence, we suggest that these Vinča houses were set ablaze intentionally. Further, we propose that the prominence of emmer and pear can reflect a possible economic differentiation among the households and perhaps even incipient specialisation in food production. Our assumption is that such tendencies would have, in effect, both increased and decreased the economic independence of individual households. This would have had (negative) implications for social relationships in the time of apparently eroding social cohesion of the Vinča community.

Key words. – Neolithic, Vinča–Belo Brdo, archaeobotany, house burning, plant economy, household, social relationships

Buildings destroyed by fire are a frequent find at sites of the Neolithic Vinča culture as well as sites attributed to other cultural phenomena in the later prehistory of south-eastern Europe and beyond. Some sites feature whole groups of structures that went up in flames, forming thick layers of burned clay rubble with the inclusion of artefacts and organic remains; these are sometimes visible as 'burnt horizons' in the sites' stratigraphies.[1] At the eponymous Vinča culture site (Vinča–Belo Brdo), one such horizon comprised several burnt wattle-and-daub buildings ('houses') dated to the last decades of the settlement's occupation (c. 4500 cal BC). These houses contained caches of charred wild pear (*Pyrus pyraster*), preserved within or under the destruction layers. Two houses also preserved stores of emmer grain (*Triticum dicoccum*), charred *in situ* within large ceramic pots (*pithoi*). Other types of plant remains were found in/under the house rubble, but only in small amounts and some are possibly intrusive from subsequent use of the location. The emmer and wild pear deposits distinguish the Vinča site from other archaeobotanically-analysed sites in the Vinča network. So far, no other Vinča culture site has yielded similarly dense finds of pear, or large quantities of emmer and pear in association; however, future research may change the picture.

Ever since the early discoveries of burned prehistoric houses in south-eastern Europe in the mid-20th century, the discussion has been on-going about the

[1] Chapman 1999; Tringham 2005.

Manuscript received 9th April 2023, accepted 1st June 2023

causes, social and practical context, and meaning(s) of this phenomenon. Chapman[2] critically evaluated explanations and arguments regarding accidental versus intentional house burning. He concluded that deliberate burning best explains many of the archaeological situations – a view also advanced by Tringham and Stevanović: that this was a form of house abandonment, a ritual marking the closure of a house.[3] Both the house and the objects and materials present or placed (potentially in a structured way)[4] in the houses prior to ignition constituted part of the ritual that could have carried a variety of symbolic purposes. The end of a house's use-life, an interruption in the household's life (due to death of the household head), the human lifecycle embodied as material construction and deconstruction, metaphorical (and practical) purification of the living space, emotional healing, maintaining a link with ancestors (through re-use of the location or materials, e.g. burnt rubble for subsequent construction and filling), assertion of identity, social levelling, differentiation, or integration; these and similar motives and mechanisms have been stated as potentially underpinning and justifying the intentional destruction by fire.[5]

Archaeological investigations of burnt houses in south-eastern Europe document extremely high and sustained firing temperatures, the presence of "ignition points" within the structures, and possible fire accelerants (vegetal materials); whereas experimental house burning suggests that additional fuel and a strong draught of air are essential for a result comparable to archaeological cases.[6] Beyond these practical aspects seen as supporting the notion of intentional, Chapman emphasises that the structured positioning of house contents and/or the presence of objects atypical for, or quantitatively exceeding, standard inventories point decisively to the house interiors being formalised as part of the ritual, making the houses themselves a special deposit.[7] Porčić, however, notes that submitting only ordinary house contents to fire does not indicate the contrary (i.e. non-planned abandonment) and can, itself, constitute a symbolic act.[8]

Rarely have plant remains from burnt houses been drawn into the discourse on the (un)intentionality of fires in south-eastern Europe, although there are examples detailing plant food contents of such structures,[9] including one of the Vinča buildings we consider here.[10] Outside the region, the interdisciplinary examination of a burnt Neolithic house at Çatalhöyük in Turkey is a good example that highlights the complexity as well as the potential of this type of research.[11] We present combined archaeobotanical, architectural and artefactual evidence available from four partially or entirely excavated burnt buildings on the Vinča tell. We demonstrate the prominence of wild pear and emmer in these structures and that these materials represent remnants of food storage and processing – food handling for everyday needs and perhaps also for ceremonies. We maintain that the fires were not accidental and we propose that they may have served a symbolic or political purpose, such as to reinforce the sense of community and supress social differentiation. We then discuss the finds of emmer and pear as possible reflections of socioeconomic differences, if such existed, among the households and as potential signs of incipient specialisation in food economy at a time when a similar trend was apparently emerging in other spheres of production in the Vinča culture. These developments would have had implications for the social cohesion of the Vinča community and may have contributed to its dissolution.

The Vinča–Belo Brdo site

This tell-settlement gave its name to the Late Neolithic Vinča cultural network that extended over much of the central Balkans from the mid-6th until the mid-5th millennium BC.[12] The mound sits on the right bank of the Danube, some 15 km southeast of the confluence with the Sava river (Fig. 1). The multi-period (Early Neolithic through the Middle Ages) cultural layer is ca. 10 m thick, with up to 8.5 m of it attributed to the Vinča culture.[13] The Late Neolithic settlement was at least 20 ha in size but in the early modern times, the Danube eroded an unknown portion of the tell and thus the full extent of the site remains unknown.

---

2 Chapman 1999.

3 Tringham et al. 1992; Chapman 1999; Stevanović 1997; Tringham 2005.

4 cf. Chapman 1999.

5 Tringham et al. 1992; Stevanović 1997; Chapman 1999; Tringham 2005; Gheorgiu 2008; Cotiugă 2009; Raczky et al. 2020.

6 Bankoff and Winter 1979; Stevanović 1997; Tringham 2005; Gheorgiu 2008; Cotiugă 2009.

7 Chapman 1999, 118–119.

8 Porčić 2012.

9 E.g., Marinova 2005; Valamoti 2015.

10 Borojević et al. 2020.

11 Twiss et al. 2008.

12 Chapman 1981; Borić 2009, 2015.

13 Tasić et al. 2016.

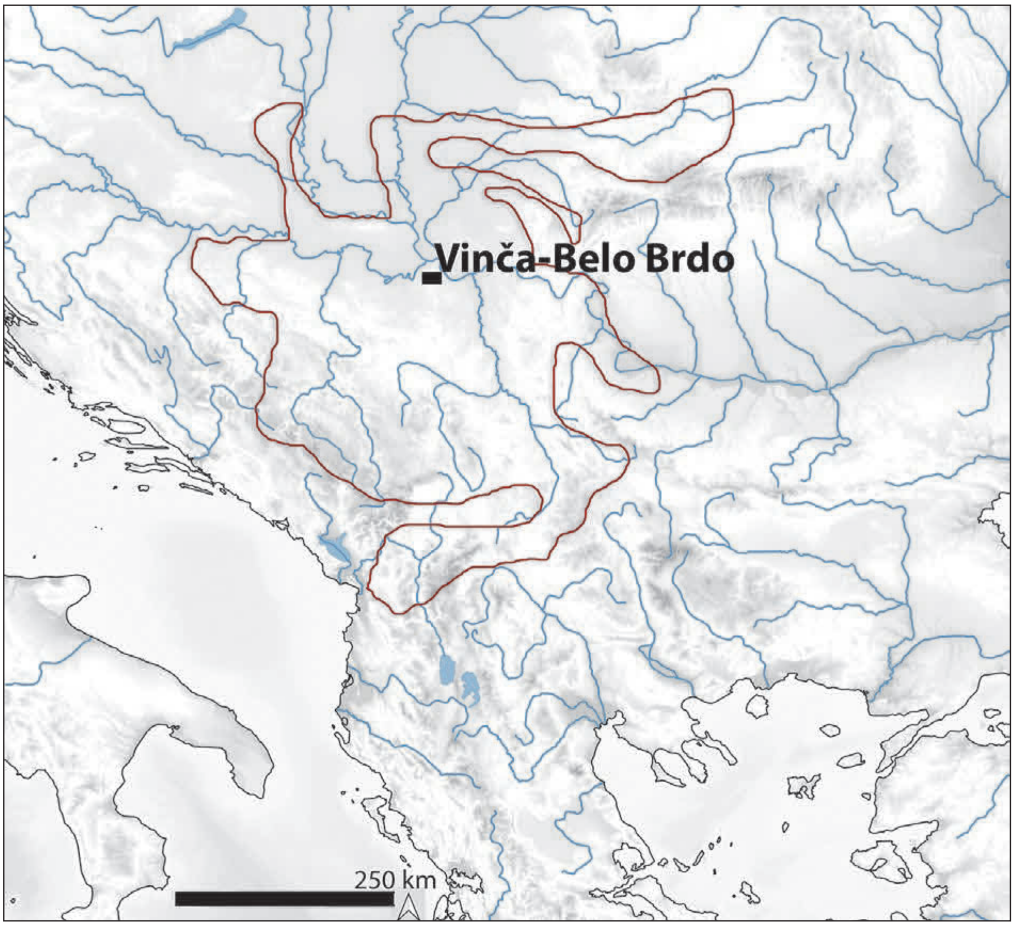


Fig. 1. Map indicating the location of the Vinča–Belo Brdo site in south-eastern Europe and the approximate distribution of the Vinča culture

Сл. 1. Карта са позицијом локалитета Винча – Бело брдо у југоисточној Европи и оквирним распрострирањем винчанске културе

A section of the site has been excavated intermittently from the early 20th century until the present day. The Vinča culture layer consists of successive building horizons with closely spaced wattle-and-daub structures, the majority of which comprised 2–3 rooms and had at least one oven. They are interpreted as residential or buildings dedicated to everyday activities, such as food preparation.[14] The buildings were discovered burnt and unburnt, with both variants yielding rich artefactual evidence in the form of pottery, clay figurines, tools and ornaments made of stone, bone, shell, clay, wood and minerals, demonstrating high rates of material production.[15] The faunal and botanical remains reveal that the subsistence was based on arable farming, animal herding, hunting, fishing and gathering.[16]

MATERIALS AND METHODS

Archaeological context of emmer grains and wild pears

In the final phases of the settlement, cereal production included the growing of emmer, einkorn (*Triticum monococcum*), Timopheev's wheat (*T. timopheevii* s.l.) and possibly barley (*Hordeum vulgare*). The preserved stores of almost pure emmer grain indicate that emmer was a major cultivated food resource. Wild plant consumption is evident from the remains of

---

[14] Vasić 1932; Borojević et al. 2020.

[15] Vasić 1936a-c.

[16] Filipović et al. 2019.



Fig. 2. Emmer grains from House 01/06 (a, b) and House 02/06 (c) and wild pears from House 03/03 (d), House 02/03 (e), House 01/06 (f, h) and House 02/06 (g) at Vinča–Belo Brdo; scale bar = 1 cm

Сл. 2. Зрна двозрне пшенице из Куће 01/06 (a, b) и Куће 02/06 (c); плодови дивље крушке из Куће 03/03 (d), Куће 02/03 (e), Куће 01/06 (f, h) и Куће 02/06 (g) на локалитету Винча – Бело брдо; размерник = 1 cm

Cornelian cherry (*Cornus mas*), water chestnut (*Trapa natans*), sloe (*Prunus spinosa*), hawthorn (*Crataegus*), wild strawberry (*Fragaria vesca*), Chinese lantern (*Physalis alkekengi*), raspberry (*Rubus idaeus*), blackberry (*R. fruticosus*), grape (*Vitis vinifera*) and hazelnut (*Corylus avellana*). Even towards the end of the settlement, more than 1,500 years after the start of agriculture in the region, the spectrum of gathered food sources was impressive.[17] Among these, wild pear seems to have been particularly important, as the fruit was discovered in concentrations in four burnt buildings within the top layers of the Neolithic occupation (Fig. 2). Almost one hundred pears were found, including whole and fragmented specimens (Fig. 3). Three of the buildings (House 03/03, 01/06 and 02/06) date towards the end of the settlement life and all burned in a fire that took place in *4550–4525 cal BC* (*68% probability*), as also confirmed by the direct AMS dates on emmer and pears.[18]

House 03/03 is a small (3 x 2.8 m), single-room building, where burning resulted in a thick layer of daub covering the floor (Fig. 4). The interior did not have a heating or cooking installation (hearth or oven) or any other fixed feature and, relative to the other structures, yielded few non-ceramic artefacts and organic remains. The absence of fire-related features suggests a

[17] Filipović et al. 2019; Borojević et al. 2020.

[18] Tasić et al. 2015, 1077 and Table 1.

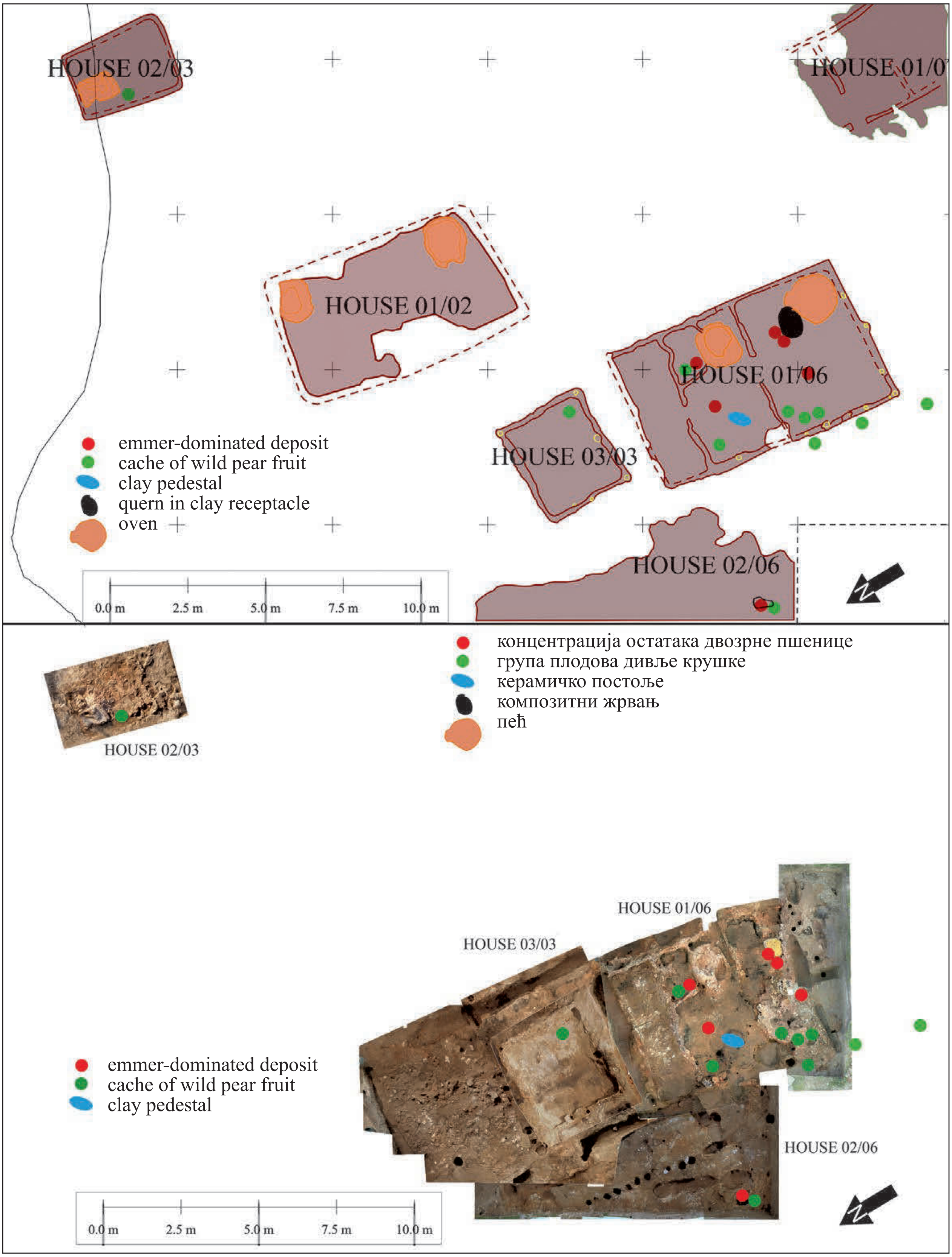


Fig. 3. Layout (top) and ortho-photo (bottom) of the burnt buildings that yielded emmer and/or pear deposits

Сл. 3. План (горе) и орто-снимак (доле) горелих објеката у којима су откривени остаци двозрне пшенице и/или крушки

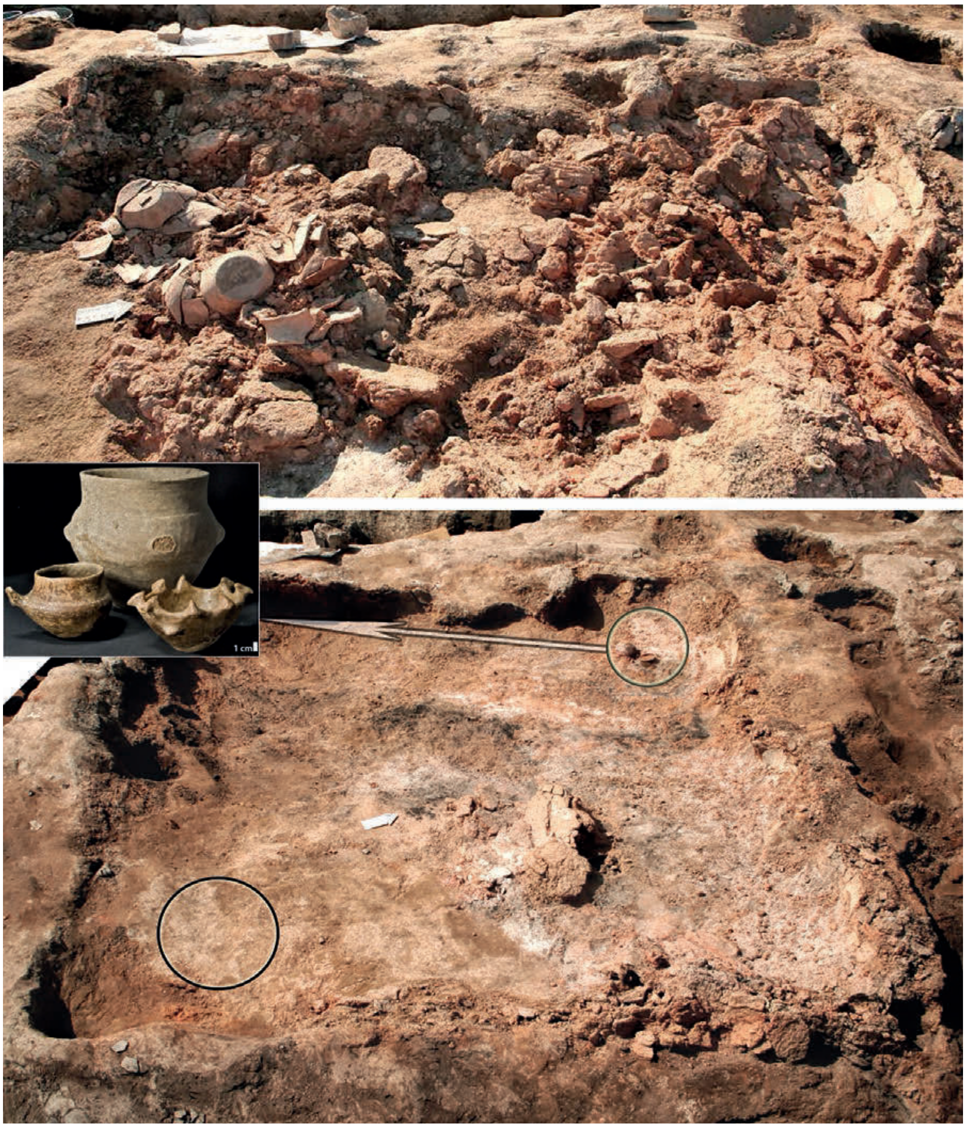


Fig. 4. House 03/03 before (top) and after (bottom) removal of the destruction layer (circles indicate the find-spot of pear and of "luxury set" of pots). Inset: the "luxury set" of pots

Сл. 4. Кућа 03/03 ӣре (īоре) и након (доле) ископавања рушевинскоī слоја (назначена су месӣа налаза крушки и „луксузноī сеӣа" ӣосуда). Фоӣоīрафија лево: „луксузни сеӣ" ӣосуда

lack of everyday fires lit within the building and, thus, a conceivably lower chance that the fire that destroyed the building resulted from a routine activity. Several groups of ceramic vessels were discovered in the destruction layer and on the floor, including medium and large (storage) vessels and, in one corner, an exquisite set of pots described as tableware used on special occasions (the "luxury set").[19] By extension, and based on the virtual absence of other materials, the building was interpreted as a place used for ceremonies, alongside its likely function as an area dedicated to the keeping of food (perhaps meant to be consumed during ceremonies). In another corner of the structure, a cache of eight whole pears was discovered in the layer of rubble immediately above the floor. Minor traces of other plants were scattered through the rubble. A discontinuous layer of white ash on the scorched floor was left behind by plant-made materials such as mats or baskets, or reeds used for roofing.

[19] Tasić 2007.

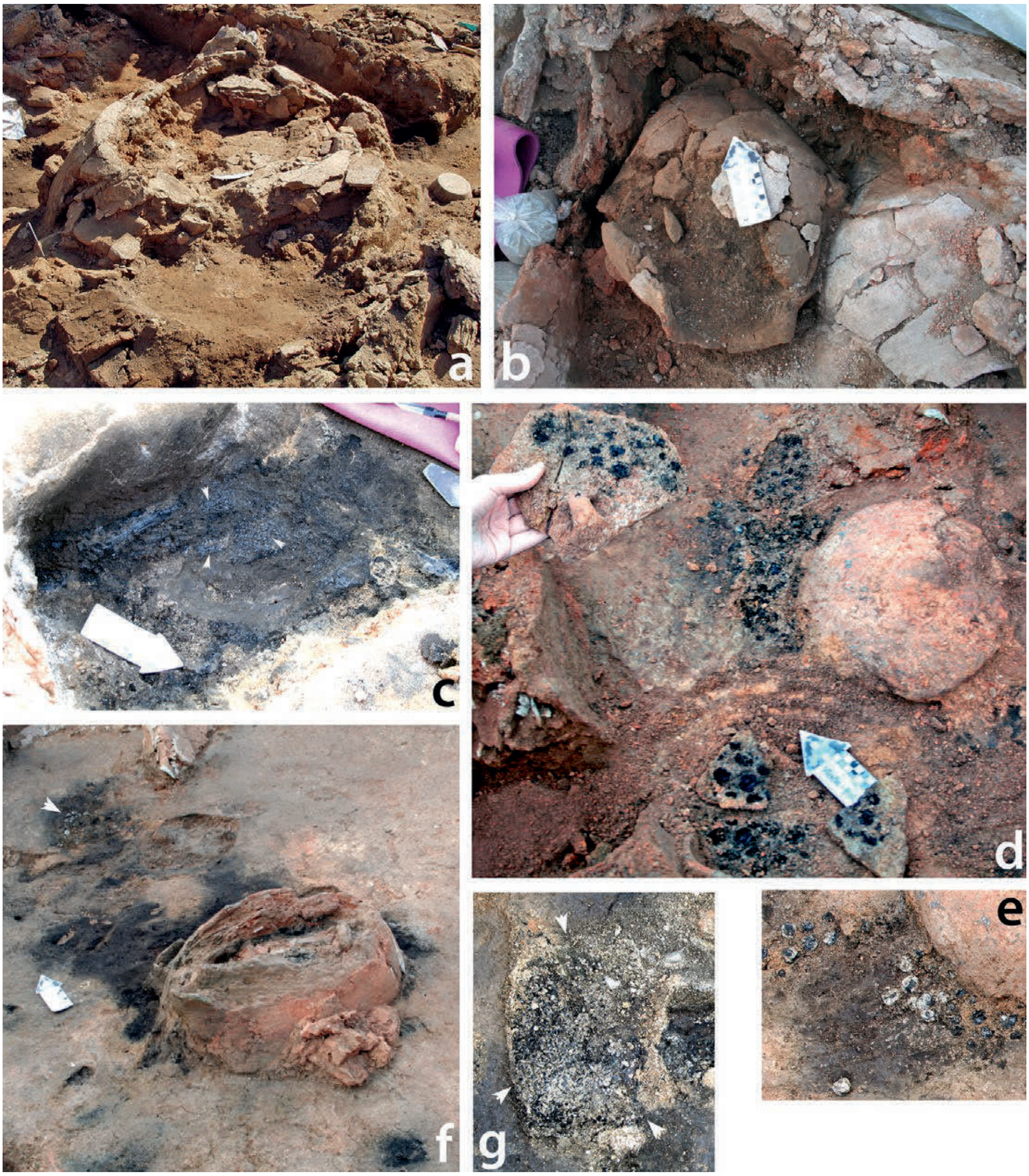


Fig. 5. Find-spots of emmer and pears in the central room of House 01/06: (a) oven, next to which two pithoi *were discovered (b), with emmer grain and pears in and around them, wood logs next to them, and more emmer under them (c), including whole ears (indicated by white arrows). Another cache of pears was encountered around and under fragments of a pot (d) and a wholly preserved clay lid (e), all found adjacent to the "pedestal" (f), around which further concentrations of emmer grain were discovered (g)*

Сл. 5. Места налаза двозрне пшеници и крушки у централној просторији Куће 01/06: (а) пећ, поред које су откривена два питоса (b) са остацима двозрне пшенице и крушки унутар и око њих, комадима дрвета поред њих, и још трагова двозрне пшенице испод њих (c), укључујући читаво класје (назначено стрелицама). Плодови крушке откривени су и око и испод фрагмената керамичке посуде (d) и потпуно очуваног керамичког поклопца (e), све у непосредној близини „постоља" (f) око ког су се регистроване концентрације зрна двозрне пшенице (g)

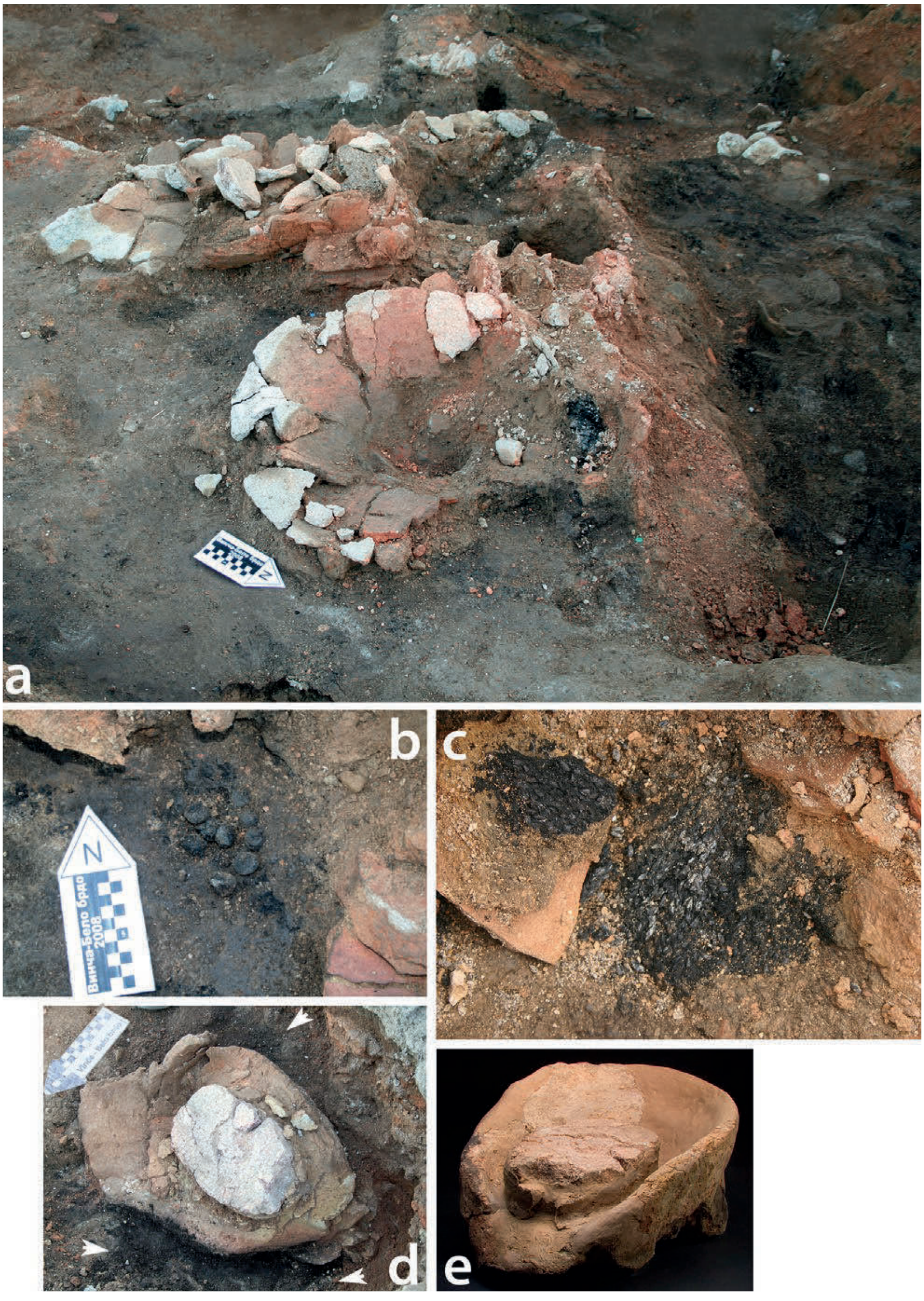


Fig. 6. Smashed pots discovered along the west wall of south room in House 01/06 (a), with clusters of pears adjacent to them (b). Emmer grains were detected on and under potshards in the same room (c). Quern in receptacle before (d) and after (e) restoration, with emmer grain concentrated in, around and under it (find-spots indicated with white arrows)

Сл. 6. Фрагментоване посуде откривене дуж западног зида јужне просторије Куће 01/06 (а), са налазима крушки у њиховој непосредној близини (b). У истој просторији откривена су и зрна двозрне пшенице, унутар и испод фрагмената керамике (c). Композитни жрвањ пре (d) и након (е) рестаурације, са налазима двозрне пшенице унутар, око и испод њега (концентрације осташака назначене стрелицама)

House 01/06 was ca. 8 x 5 m in size, consisted of three rooms (two with ovens) and stood immediately next to House 03/03; the two were likely built synchronously.[20] The burning generated a massive destruction layer (in places almost 1 m high) covering the floor, with an assortment of stone and bone objects and pots found within and under it. The building was interpreted as a space dedicated to food storage and preparation, as supported by finds of (burnt) bones of a house mouse (*Mus musculus*)[21] but also with evidence of craft activities, in the form of loom-weights and bone points found in the north room.[22] The plant inventory included about fifty pears found as caches in several locations in two of the rooms, along with large emmer deposits; remains of other plants were present in smaller quantities.

There was a thin layer of ash over the surface of the scorched floor in the smallest, north room (the one closest to House 03/03), again reflecting the burning of vegetal materials, including emmer straw.[23] There were no such remains in the central room, where the floor looked much less burnt than the overlying daub – it was dark-brown in places and did not crumble, suggesting exposure to slower and cooler fire or indirect heat.[24]

Next to the large domed oven (Fig. 5a) in the central room were two *pithoi* burned *in situ* (Fig. 5b), at least one of which contained emmer. Several pears were found in this discrete area. In the centre of the room, about twenty pears lay on the floor, around and under large fragments of pottery and a complete clay lid (Fig. 5d), all found adjacent to an oval clay object ('pedestal'; Fig. 5f) that perhaps served as a base/support for the grinding stone discovered next to it. Over a thousand emmer grains were concentrated around the pedestal and the grinding stone, and were scattered on the surrounding floor.[25]

Along the west wall of the south room, under the debris overlying the floor, caches of pears lay within or immediately next to large, thick-walled pots, which burned and were smashed by the wall (Fig. 6a-c). Several groups of pears found on the outer side of the wall probably dispersed as the roof or wall collapsed. There was little other plant material in the west half of the room except the deposit on the floor in the central part (see Fig. 3), consisting mainly of emmer grains (ca. 300) and, adjacent to it, a fragmented vessel covering whole, intact emmer ears.[26]

Further finds of emmer are associated with the portable 'grinding installation' or quern, composed of a large stone slab set into a relatively deep (25 cm) oval clay receptacle (Fig. 6d-e), found in the east half of the south room. Several hundred emmer grains and a hundred chaff segments (spikelet forks) were recovered from around, within and underneath the quern. The deposits surrounding the quern comprised about 350 flax and over a thousand bitter vetch seeds (*Vicia ervilia*), as well as small amounts of lentil (*Lens culinaris*), einkorn and barley, three whole sloe berries and a few weed seeds.[27] Remains of another oven were detected in the southeast corner. This part of the room had been damaged by the digging of a later foundation ditch, which likely caused some disturbance. Therefore, some of the plant remains may be intrusive, including from underlying, earlier layers (i.e., lifted up during ditch-digging). For instance, the radiocarbon date for the bitter vetch is earlier than the dates for the emmer and a sloe berry from the same deposit and those for some other plant remains from this room.[28]

House 02/06 is another structure that burned in the same fire as House 03/03 and House 01/06 and is located immediately west of them (Fig. 3).[29] Only its southeast corner has been fully excavated (Fig. 7a). In the lower portion of the thick destruction layer, within a broken storage jar, a few kilograms of emmer grains were discovered, admixed with small amounts of einkorn and Timopheev's wheat grain. On top and within this deposit were around thirty pears (Fig. 7b). In the narrow space between House 01/06 and 02/06, burnt remains of a woman were discovered, evidently killed by the collapsed west wall of House 01/06 (her skull smashed by a large piece of daub).[30] Here, digging of the foundation ditch for a later house dislocated the woman's leg bones, suggesting the absence of a marker (and any awareness) of the unfortunate event.

House 02/03 is comparable in size to House 03/03, but it stratigraphically post-dates the three described buildings; it is located ca. 15 m east of them (Fig. 3). Here, the thick layer of burnt daub lay on top of, or was mixed with fragments of a domed oven, the clay

20 Borojević et al. 2020.
21 Cucchi et al. 2020.
22 Tasić et al. 2007; Borojević et al. 2020.
23 Borojević et al. 2020.
24 cf. Twiss et al. 2008, 50.
25 Borojević et al. 2020.
26 Borojević et al. 2020.
27 Borojević et al. 2020.
28 Tasić et al. 2015, Table 1 and 1077.
29 Tasić et al. 2015.
30 Tasić et al. 2015.



Fig. 7. Part-excavated destruction layer of House 02/06 (a) and the emmer deposit within a broken jar, with pears (some indicated by white arrows) scattered over and through it (b). Destruction layer of House 02/03, with oven in the foreground, near to which a cache of pears was discovered (c)

Сл. 7. Истражени део рушевинског слоја Куће 02/06 (а) са налазом оставе двозрне пшенице у фрагментованој посуди, где су плодови крушке (поједини назначени стрелицама) регистровани на врху и унутар концентрације зрна (b). Рушевински слој Куће 02/03, са остацима пећи у чијој непосредној близини је откривена концентрација плодова крушке (c)

bin abutting the oven, and some pottery (Fig. 7c). About six pears lay near the remains of the oven, within *in situ* broken pots and close to a grinding stone. Other plant materials include ca. 400 flax seeds found near the oven and trace finds of emmer and einkorn.

RESULTS AND DISCUSSION

House burning scenarios

The emmer and pears from these buildings are fully charred and very well preserved. The pears may have been dried prior to charring, as suggested by their wrinkled epidermis.[31] Experiments show that dry seeds/fruit become more readily charred and have a higher survival potential than those with a high moisture or oil content.[32] Equally possible is that the fruit was fresh, and that its moisture content was gradually reduced during (long) exposure to low heat. For instance,

[31] see Helbaek 1952.

[32] Wright 2003.

when buried in anoxic conditions near a fire (or under it) and undisturbed after the deposition, fresh fruit becomes wholly charred and preserves its form. Desiccation then happens as part of the exposure to lower temperatures and/or for a shorter time.[33] It is likewise possible that some pears were fresh and some not prior to charring. In two of the buildings, pears were found in direct proximity to emmer deposits (01/06) or within the emmer concentration (02/06). Controlled heating of einkorn and emmer grain demonstrated that temperatures of between ca. 220°C and 240°C maintained for extended periods (e.g., 24 h) are most likely to result in good preservation of the grain.[34] It is probable that emmer and pears at Vinča were exposed to similarly low temperatures and long periods. Indicatively, a group of pears was found close to very well-preserved charred seeds of flax (*Linum usitatissimum*), whose high oil content normally makes them burn away quickly or leaves them heavily distorted.[35]

The houses contained everyday objects, with the exception of House 03/03. If this building featured in ceremonies, for instance as a place to store or serve food and drink for feasts, the burning of this and the associated houses (01/06 and 02/06) may have been a symbolic or aggressive culmination of such an event – either way deliberate. The female victim suggests the fire may have been unexpected, such as in a violent act, perhaps prompting the woman to try to save the house contents.[36] On the other hand, a symbolically-charged ignition could have changed character as the fire progressed, with a similar surprise effect; perhaps intentionally lit in one structure and spreading unplanned to the adjacent buildings. A house-burning experiment shows how fire set on the outside of a thatched roof spread to the neighbouring one in less than a minute.[37] Crucially, it also demonstrates how accidental burning produces low temperatures, is of short duration and leaves behind only partially collapsed walls. The houses at Vinča were reduced to rubble, with the wooden construction burned away or charred and the fragments of vitrified daub suggesting temperatures of 800°C and above.[38] Experiments illustrate that, along with everyday vegetal material and plant-made objects kept in wattle-and-daub structures, additional, substantial quantities of high-heat fuel need to be added for a similar effect, and at least three days need to be allowed for a complete burn-down.[39]

The vegetal combustibles in or on the Vinča houses functioned as kindlers or accelerants and the ashy layers on the floors are their remnants. Simulations of 'accidental' and intentional firing of replica houses reveal that the temperatures at the floor level would have favoured charring rather than burn off of cereal grain, especially that kept in clay containers. The reason seems to be that, by the time the construction, and other wood, is aflame and starts generating high heat, the floor is already covered by roof elements (including thatch, burning at low temperatures) or parts of the wattle-and-daub ceiling, and then receives (lower-intensity) heat indirectly, in a more-or-less anaerobic environment.[40] We assume that such conditions preserved the emmer, wild pear and other plant remains we found under the rubble. The unevenly and generally less-burnt floor in the central and south rooms of House 01/06, where these remains abound, support this scenario.

While no experiment can claim accurate reproduction of prehistoric cases, the similarities we find between the Vinča examples and the deliberately incinerated replica houses direct us to a conclusion that accidental burning was highly unlikely in our study cases. We do not have direct evidence of additional fire fuel, which was necessary for conflagrations of this kind, but this is also in line with the observations made in experiments, because (most of) the fuel would have burned away, leaving behind thoroughly burnt earthen architecture, as that at Vinča. The existing and additional fuel may have consisted of firewood, construction wood, animal dung, reeds, textile, oil and/or alcoholic beverages, some perhaps kept in the houses.[41]

Economic perspective

The combination of emmer and pear at Vinča can be understood as an expression of a traditional cultivation-gathering production system in which the functional integration of farming units and natural ecosystems underpinned food sufficiency and security during the long life of the settlement. Such a lifestyle would have been embedded in the community identity and would have increased the 'cumulative place-value' of

---

[33] Sievers and Wadley 2008; Filipović et al. 2020.

[34] Charles et al. 2015.

[35] Rösch 1998.

[36] Tasić et al. 2015.

[37] Cotiugă 2009, 313.

[38] cf. Stevanović 1997.

[39] Bankoff and Winter 1979; Gheorgiu 2008, 56; Cotiugă 2009: 316–317.

[40] Bankoff and Winter 1979; Cotiugă 2009, 314–316.

[41] Tringham 2005, 102; Twiss et al. 2008, 52.

the settlement.[42] In practical terms, the particular focus on these two out of the wide spectrum of crops and wild plants may have been a "scheduling decision", determined by the distinct seasonality of these resources and the availability of labour.[43] In the study region, the yellowish-green wild pear ripens in late summer/early autumn (mid-August to mid-October[44]). Crop harvesting and processing would have been completed by then,[45] freeing up time for the collection of pears and other fruit (e.g., Cornelian cherry, hazel, sloe and hawthorn) ripening in the same season and in the same type of habitat (forest edges and pastures, and borders of the alluvial zone).[46]

At Vinča–Belo Brdo, emmer and pears were stored indoors, in ceramic vessels or perishable containers (such as bags hanging from rafters), in spaces used for food processing and preparation. For long storage, pears need to be dried or pickled; gradual drying at room temperatures seems to have been practiced at Vinča. This would have prevented mould growth and reduced fruit astringency,[47] the latter a characteristic of wild pears.[48] With water evaporation, the sugar concentration in pears increases,[49] which was maybe a desirable outcome, especially if the pears were intended for a fermented drink. Pickling is another option, done by placing the fruits in clay vessels with tightly fitting lids and then fermenting by immersing them in water or by adding salt.[50] The pears found under a clay lid in the central room of House 01/06 may point to such a practice. Those in the probably younger House 02/03 show that this plant resource was available and consumed until the very end of the settlement, suggesting its continual presence in the site's surroundings.

In the landscape around Vinča, consisting of low, gentle hills (up to 300 m asl), pear trees would have been an element of the mixed oak-hornbeam forests, of which nowadays degraded traces are sporadically preserved and sometimes include pear trees.[51] They would have occupied forest edges and pastures, and perhaps borders of the alluvial zone along the Danube.[52] To ensure and promote the growth of pear, Vinča dwellers may have maintained open spaces for this light-demanding species and invested in pruning and warding off animals. They also invested considerable effort in securing crop yields, through intensive tilling and weeding and by replenishing nutrients in cultivated soils through manuring.[53] Plant management likely took up considerable time and labour on the part of producers.

Away from the Vinča tell, the emmer-and-pear 'package' has not been seen at other analysed sites in the Vinča network, although the remains of both have been discovered at several localities.[54] Some differences among (subregional groups of) Vinča sites in the spectrum of cultivars and gathered fruits have previously been identified and explained as resulting from environmental limitations and cultural preferences.[55] Also noted is the variation between subregions and sites in the representation of cattle – the chief domesticate in the Vinča culture – in relation to other domestic (sheep, goat and pig) and hunted animals.[56] Apparently, within the general farming lifestyle, there existed inter-site differences in the range of domestic and wild resources consumed. Perhaps such variability occurred on an even smaller scale, such as within individual communities, i.e., between households or other smaller social units, and were shaped by the social context in which the decisions related to food production were made.

Social context

It has been proposed that the autonomous household was the fundamental socioeconomic unit in the Vinča society. Households operated "as the main units of cooperative production and distribution".[57] House 01/06 – a dedicated food storage and processing area, and the two adjacent and coeval buildings, may have together formed a compound used by the same household, perhaps a large, multi-family one, which is argued to have been the basic socioeconomic unit in the late phase of the Vinča culture.[58] As one possible reason

---

[42] Chapman 2006.
[43] Flannery 1968, 227.
[44] Zavišić et al. 2017.
[45] cf. Borojević 2006, 130.
[46] Filipović et al. 2019.
[47] Wiltshire 1995.
[48] Zavišić et al. 2017.
[49] Guiné and Castro 2002.
[50] Knežević 1964, 289; Valamoti 2015, 41.
[51] Bogojević 1968.
[52] Zavišić et al. 2017.
[53] Filipović et al. 2019; Gillis et al. 2020.
[54] de Vareilles et al. 2022.
[55] Gaastra et al. 2019; de Vareilles et al. 2022.
[56] Orton 2008; Orton et al. 2016, 2021.
[57] Tringham et al. 1992, 381.
[58] Chapman 1981; Tringham et al. 1992.

for the emergence of the extended family household, Flannery[59] sees economic needs, principally labour requirements that exceed the capacity of a nuclear family: cultivation and herding of a range of crops and animals, and craft production. These larger units would benefit from a pooling of labour and goods, and sharing and loaning of the workforce.

Through the pooling of labour, such units would have alleviated any differences among nuclear households in production rate or potential. They would have promoted cooperative effort, emblematic of an agriculture-reliant food economy.[60] However, some units may have grown larger than others, requiring more storage, cooking and living space, thereby elevating the settlement density; social tension would have emerged or increased in such an environment. Although no clear signs of social stratification in the Vinča society have been observed,[61] maintaining supra-household coordination and cooperation is challenging in large communities.[62] It is said that, in the Vinča culture, "ritually prescribed behaviour" and supra-household "social controls within a ritual framework" secured and upheld communal cohesion; any possible social ranking had an integrative role.[63] House building, digging of ditches and other major construction works brought community members together, enhancing and improving the social bonds.[64] House burning could also have been an act that involved (large segments of) the community[65] and this would have fostered its potentially symbolic character.

Commensality features as a political mechanism creating, regulating and strengthening social relationships. Indicatively, faunal evidence of feasting in the Vinča culture points to a pronounced inter-household status competition and power imbalance. Domestic cattle were a regular 'ingredient' of feasts. It served as both a symbol of wealth and social differentiation and a 'medium' for negotiating differences and supporting a sense of community.[66] Assuming that House 03/03 served as a space for ceremonies entailing commensality, perhaps the adjacent structures were used to store and prepare ceremonial meals, conceivably alongside their everyday use. In this case, the emmer and pear hoards may have represented stocks of food for ceremonies.

Besides animal production, plant economy also plays a role in intra-community cohesion and cooperation[67] and the resilience of a farming society hinges on the cooperative effort in both plant and animal husbandry.[68] Within the shared agricultural lifestyle of a community, choice of plant foods can reflect the 'culinary identity' of individual households, evident as distinct ingredients and, thus, recipes and tastes.[69] Archaeobotanical evidence documents a wide range of crops and edible wild fruits available to the residents of the Neolithic Vinča mound. That some households focussed on emmer and pear may suggest intra-communal differences in plant choices. However, the spatial and chronological limits of the investigated part of Vinča–Belo Brdo do not permit observations on how widespread or limited the consumption of the emmer and pear package was across the settlement and through time. Still, if such differentiation existed, it may have been generated by some level of specialisation in the production and procurement of certain foods.

In the context of the Vinča culture, specialisation has been discussed in relation to crafts, primarily pottery and tool making. Here, differences in the local or regional styles and choices of raw materials and technologies served as indicators of inter-settlement distinction in craft activities.[70] A functional differentiation of settlements has also been proposed, whereby some habitations focussed on (or were founded for) the extraction of natural resources (minerals, salt, stone and antler) or area surveillance.[71] Perhaps the prominence of emmer and pear in several houses at Vinča points to a similar tendency emerging in food economy: selection of specific food resources and related practices. A particular focus on selected plant resources may have generated specialised skill and knowledge on the one hand, and on the other, incipient division of labour, in which only some individuals or groups carried out certain tasks. This finds parallels in what was termed "resource and producer specialisation" in

---

59 Flannery 2002, 424–426.

60 Bogaard 2017.

61 Chapman 1981; Tringham and Krstić 1990; Russell 1993; Borić 2008.

62 Chapman 1992; Halstead 1996.

63 Chapman 1981, 82–83, 134–135.

64 Borić et al. 2018.

65 Tringham 2005, 105–107.

66 Russell 1993; Orton 2008.

67 Allen 2017; Bogaard 2017.

68 cf. Bogaard 2017.

69 e.g. Palmer and Van der Veen 2002; Fuller 2005.

70 e.g. Radivojević et al. 2010; Vuković and Miloglav 2018; Vitezović and Antonović 2020.

71 Garašanin 1979; Jovanović et al. 1982; Radivojević et al. 2010; Kapuran et al. 2018; Vitezović and Antonović 2020.

crafts.[72] We are lacking clear evidence of these tendencies with respect to plant production at Vinča. If they did emerge, this would have happened at the household level[73] and the household would have decided if and how to distribute the tasks, divide the labour and share the knowledge and resources.[74]

A focus on specific plant resources may have offered households an opportunity to pursue and promote their own choices and actions in food production. Should these have counteracted communal standards, a misbalance would have occurred between the social power and interests of the smaller and the larger group,[75] adding to the tensions between the collective and individual, between "differentiation and unification".[76] A low degree of communal integration would have adversely affected the pooling of labour, transfer of knowledge, sharing of tools and produce, and other forms of cooperation.[77] "The transformation of those social relationships that encompass the manipulation of materials by humans",[78] if unable to reconcile collective standards and individual interests, could have caused the breakdown of the Vinča society.

The Vinča network diminished and, ultimately, dissolved by around 4400 cal BC, which is taken as the end of the Neolithic in this part of Europe. Its demise was possibly due to weakening of intra- and inter-communal social ties resulting from the increasing social complexity and differentiation seen in the final stages of the Vinča culture.[79] The mechanisms that had, until then, secured cohesion and negotiated tensions in the essentially egalitarian society disintegrated. These processes would have been fuelled by the growing importance of individual households and their competition.[80]

Alternatively, while potentially increasing their autonomy in decision-making, specialised production would have rendered households less self-reliant and, in turn, more dependent on others, thus tightening and furthering bonds within a community.[81] In other words, an apparent emphasis on one or another set of food sources may have been an aspect of supra-household cooperation in production. Emmer, pears and other products could have been shared or exchanged, while their harvest/collection and consumption could have brought (parts of) the community together, such as at ceremonies aimed at strengthening inter-household socioeconomic ties and levelling differences. In this context, setting emmer and pear houses on fire could have been an act of goodwill – relieving the tensions – even if it served to exemplify the fate of an unruly household and, thus, had a negative connotation. There are multiple possible interpretations, and one relates to the nature of the archaeological record. The contents of Vinča houses at the time of burning included stores of plant food. However, what was kept in the buildings at that moment could have been only a fraction of the foods their occupants produced and/or consumed – a snapshot of the final plant food inventory.

Conclusion

At Neolithic Vinča and elsewhere in the Vinča culture, house building, the digging of ditches, food and craft production entailed cooperation at a community and household level, tightening and furthering the social bonds. House burning was a communal event, if for no other reason than a hazard demanding a joint reaction. Some Vinča fires were perhaps sparked by the growing autonomy of households and, resulting from it, declining social cohesion and cooperation. Based on the evidence presented here and the experimental findings, we conclude that the burning of the four houses from the end of the Neolithic settlement at Vinča was a result of a decision, not of an accident. Hoards of emmer and pears in these buildings represented stored food, some possibly in the process of being prepared for cooking or consumption. Although intentional, the fire that destroyed the three coeval buildings, which possibly represented elements of a single household compound, may have been unexpected or unwanted by some, such as by the female victim. In their path, the fires destroyed stores of food, which may have been deliberately submitted to the flames.

Formal chronological modelling for the top of the Neolithic Vinča tell, at least its excavated portion, indicated short house lives and frequent house fires. It should be stressed that, should the burning frequency reflect attempts at reconciling collective standards and

---

[72] Rice 1981.

[73] Rice 1981.

[74] Chapman 1996, 74.

[75] cf. Durkheim 1997, 275–284; Perlès and Vitelli 1999.

[76] Souvatzi 2012, 25.

[77] Kaiser and Voytek 1983.

[78] Tringham 1992, 137.

[79] Tringham and Krstić 1990; Tringham 1992; Chapman 2006; Borić 2009, 2015; Tasić et al. 2015.

[80] Tringham and Krstić 1990; Chapman 1990, 1992; Tringham 1992.

[81] Durkheim 1997, 275–277.

individual interests, then it could be taken as reflecting an eroding sense of community.[82] The prominence of emmer and pears may embody a distinction between the households in aspects of plant production – an idea to be tested using a larger corpus of data, from additional houses, burnt and unburnt. For now, we speculate that, had the plant food economy showed signs of emergent specialisation in terms of resources or production methods, this could have had a dual effect on the community: increasing tensions and competition, while fostering solidarity and strategic cooperation. In the context of the growing social complexity and differentiation posited for the final stages of the Vinča culture, the former may be a more realistic scenario. The wasted food and burnt buildings may speak to strained relationships in a community experiencing social decline.

Acknowledgements

The Ministry of Education, Science and Technological Development of the Republic of Serbia (Ref. 177012) and the German Research Foundation (Deutsche Forschungsgemeinschaft, Ref. 290391021 – SFB 1266) supported the research and reporting of the results. The manuscript benefitted from constructive and insightful criticism offered by four anonymous reviewers (who recommended it for publication in *Antiquity* and the *Journal of Archaeological Science: Reports*); we are very grateful for their advice and positive feedback. We opted for *Starinar* as a reputable publication outlet, highly relevant for the region and maintaining an exceptionally long tradition while charging no fees. Our special thanks go to the journal's editorial board and Ms Ana Gavrilović. DF dedicates this work to her mother.

82 Tasić et al. 2015.

BIBLIOGRAPHY:

Allen 2017 – Allen, S.E. 2017. Cultivating identities: Landscape production among early farmers in the Southern Balkans, in M. Gori & M. Ivanova (ed.) *Balkan Dialogues: Negotiating Identity between Prehistory and the Present*: 213–239. New York: Routledge.

Bankoff and Winter 1979 – Bankoff, A. and F. Winter. 1979. A house-burning in Serbia. *Archaeology* 32: 8–14.

Bogaard 2017 – Bogaard, A. 2017. Neolithic "cooperatives": Assessing supra-household cooperation in crop production at Çatalhöyük and beyond, in M. Benz, H.G.K. Gebel and T. Watkins (ed.) *Neolithic Corporate Identities.* Studies in Early Near Eastern Production, Subsistence, and Environment 20: 117–131. Berlin: Ex Oriente.

Bogojević 1968 – Bogojević, R. 1968. Floristička i fitocenološka ispitivanja vegetacije na Višnjičkoj kosi kraj Beograda. *Glasnik Botaničkog zavoda i bašte Univerziteta u Beogradu* 2: 79–99.

Borić 2008 – Borić, D. 2008. *First households and 'house societies' in European prehistory,* in A. Jones (ed.) *Prehistoric Europe: theory and practice*: 109–142. Chichester: Wiley-Blackwell.

Borić 2009 – Borić, D. 2009. Absolute dating of metallurgical innovations in the Vinča culture of the Balkans, in T.K. Kienlin & B.W. Roberts (ed.) *Metals and societies. Studies in honour of Barbara S. Ottaway*: 191–245. Bonn: Habelt.

Borić 2015 – Borić, D. 2015. The end of the Vinča world: Modelling Late Neolithic to Copper Age culture change and the notion of archaeological culture, in S. Hansen, P. Raczky, A. Anders and A. Reingruber (ed.) *Neolithic and Copper Age between the Carpathians and the Aegean Sea: Chronologies and technologies from the 6th to 4th millennia BCE*: 57–217. Bonn: Marie Leidorf.

Borić et al. 2018 – Borić, D., B. Hanks, D. Šljivar, M. Kočić, J. Bulatović, S. Griffiths, R. Doonan and D. Jacanović. 2018. Enclosing the Neolithic world. A Vinča culture enclosed and fortified settlement in the Balkans. *Current Anthropology* 59: 336–346.

Borojević 2006 – Borojević, K. 2006. *Terra and Silva in the Pannonian Plain: Opovo agro-gathering in the Late Neolithic*. (British Archaeological Reports International Series 1563). Oxford: Archaeopress.

Borojević et al. 2020 – Borojević, K., D. Antonović, J. Vuković, V. Dimitrijević, D. Filipović, M. Marić, K. Penezić, B. Tripković and N. Tasić. 2020. Use of space in a Late Neolithic/Early Eneolithic building at the site of Vinča–Belo Brdo in the Central Balkans, in D. Urem-Kotsou, M. Burić and N. Tasić (ed.) *Making spaces into places. The north Aegean, the Balkans and western Anatolia in the Neolithic*: 157–180. Oxford: BAR Publishing.

Chapman 1981 – Chapman, J. 1981. *The Vinča culture of south-east Europe: studies in chronology, economy and society*. (British Archaeological Reports International Series 117). Oxford: Hedges.

Chapman 1990 – Chapman, J. 1990. The Neolithic in the Morava-Danube confluence area: A regional assessment of settlement pattern, in R. Tringham and D. Krstić (ed.) *Selevac: A Neolithic village in Yugoslavia*: 13–45. Los Angeles: University of California.

Chapman 1992 – Chapman, J. 1992. Arenas of social power: The case of Serbian prehistory. *Zbornik Narodnog muzeja* 14: 305–317.

Chapman 1996 – Chapman, R. 1996. "Inventiveness and ingenuity"? Craft specialisation, metallurgy, and the West Mediterranean Bronze Age, in B. Wailes (ed.) *Craft specialisation and social evolution: In memory of V. Gordon Childe*: 73–83. (University Museum Monograph 93). Philadelphia: University of Pennsylvania.

Chapman 1999 – Chapman, J. 1999. Deliberate house-burning in the prehistory of central and eastern Europe, in A. Gustafsson & H. Karlsson (ed.) *Glyfer och arkeologiska rum – En vänbok till Jarl Nordbladh*: 113–126. Göteborg: Univeristy of Göteborg Press.

Chapman 2006 – Chapman, J. 2006. Why was the Vinča-Belo Brdo tell occupied for so long?, in N. Tasić, B. Jovanović, S. Marinković and L. Nikolić (ed.) *Current problems of the transition period from the Starčevo to the Vinča culture*: 213–236. Zrenjanin: Narodni muzej Zrenjanin.

Charles et al. 2015 – Charles, M., E. Forster, M. Wallace and G. Jones. 2015. "Nor ever lightning char thy grain": establishing archaeologically relevant charring conditions and their effect on glume wheat grain morphology. *Science & Technology of Archaeological Research* 1: 1–6.

Cotiugă 2009 – Cotiugă, V. 2009. Experimental Archaeology: The burning of the Chalcolithic dwellings, in V. Cotiugă, F.A.Tencariu & G. Bodi (ed.) *Itinera in praehistoria*: 303–342. Iaşi: Editura Universităţii „Alexandru Ioan Cuza".

Cucchi et al. 2020 – Cucchi, T., K. Papayianni, S. Cersoy, L. Aznar-Cormano, A. Zazzo, R. Debruyne, R. Berthon, A. Bălăsescu, A. Simmons, F. Valla, Y. Hamilakis, F. Mavridis, M. Mashkour, J. Darvish, R. Siahsarvi, F. Biglari, C.A. Petrie, L. Weeks, A. Sardari, S. Maziar, C. Denys, D. Orton, E. Jenkins, M. Zeder, J.B. Searle, G. Larson, F. Bonhomme, J.-C. Auffray and J.-D. Vigne. 2020. Tracking the Near Eastern origins and European dispersal of the western house mouse. *Scientific Reports* 10: 8276.

de Vareilles et al. 2022 – de Vareilles, A., D. Filipović, Dj. Obradović and M. Vander Linden. 2022. Along the rivers and into the plain: Early crop diversity in the Central and Western Balkans and its relationship with environmental and cultural variables. *Quaternary* 5(1): 6.

Durkheim 1997 – Durkheim, E. 1997. *The division of labor in society*. Translated by George Simpson. London: Collier-Macmillan Limited.

Filipović et al. 2018 – Filipović, D., Đ. Obradović and B. Tripković. 2018. Plant storage in Neolithic south-east Europe: synthesis of the archaeological and archaeobotanical evidence from Serbia. *Vegetation History and Archaeobotany* 27: 31–44.

Filipović et al. 2019 – Filipović, D., M. Marić, D. Challinor, J. Bulatović and N. Tasić. 2019. Natural environment and resources, and the long life of the Neolithic settlement at Vinča, southeast Europe. *Archaeological and Anthropological Sciences* 11: 1939–1960.

Filipović et al. 2020 – Filipović, D., M. Fotirić Akšić, D. Dabić Zagorac and M. Natić. 2020 Gathered fruits as grave goods? Cornelian cherry remains from a Mesolithic grave at the site of Vlasac, Danube Gorges, south-east Europe. *Quaternary International* 541: 130–140.

Flannery 1968 – Flannery, K.V. 1968. Archaeological systems theory and early Mesoamerica, in B.J. Meggers (ed.) *Anthropological Archaeology in the Americas*: 67–87. Washington, DC: Anthropological Society of Washington.

Flannery 2002 – Flannery, K.V. 2002. The origins of the village revisited: From nuclear to extended households. *American Antiquity* 67: 417–433.

Fuller 2005 – Fuller, D.Q. 2005. Ceramics, seeds and culinary change in prehistoric India. *Antiquity* 79: 761–777.

Gheorgiu 2008 – Gheorgiu, D. 2008. Built to be burnt: The building and combustion of Chalcolithic dwellings in the Lower Danube and Eastern Carpathian areas, in L. Nikolova, M. Merlini and A. Comşa (ed.) *Circumpontica in Prehistory. Western Pontic Studies*: 55–68. Oxford: Archaeopress.

Gaastra et al. 2019 – Gaastra, J., A. de Vareilles and M. Vander Linden. 2019. Bones and seeds: an integrated approach to understanding the spread of farming across the western Balkans. *Environmental Archaeology*. DOI: 10.1080/14614103.2019.1578016

Gillis et al. 2020 – Gillis, R.E., J. Bulatović, K. Penezić, M. Spasić, N.N. Tasić and C.A. Makarewicz. 2020. Herding and hunting at Vinča-Belo Brdo and Stubline during the Late Neolithic, a stable isotopic perspective, in N. Marković and J. Bulatović (ed.) *Animal husbandry and hunting in the Central and Western Balkans through time*: 19–39. Oxford: BAR Publishing.

Guiné and Castro 2002 – Guiné, R.P.F. and J.A.A.M. Castro. 2002. Pear drying process analysis: drying rates and evolution of water and sugar concentrations in space and time. *Drying Technology* 20: 1515–1526.

Hastorf 2017 – Hastorf, C.A. 2017. *The Social Archaeology of Food*. Cambridge: Cambridge University Press.

Helbaek 1952 – Helbaek, H. 1952. Preserved apples and *Panicum* in the prehistoric site at Nørre Sandegaard in Bornholm. *Acta Archaeologica* 23: 107–115.

Halstead 1996 – Halstead, P. 1996. The development of agriculture and pastoralism in Greece: When, how, who and what?, in D.R. Harris (ed.) *Origins of the spread of agriculture and pastoralism in Eurasia*: 296–310. Washington, DC: Smithsonian Institution Press.

Jovanović 1982 – Jovanović, B. 1982. *Rudna Glava. Najstarije rudarstvo bakra na Centralnom Balkanu*. Bor: Muzej rudarstva i metalurgije – Beograd: Arheološki institut.

Kaiser and Voytek 1983 – Kaiser, T. and B. Voytek. 1983. Sedentism and economic change in the Balkan Neolithic. *Journal of Anthropological Archaeology* 2: 323–353.

Kapuran et al. 2018 – Kapuran, A., A. Bulatović and D. Milanović. 2018. Settlement pattern changes during the Central Balkans Copper Age, in *S. Dietz, F. Mavridis, Ž. Tankosić and T. Takaoğlu (ed.) Communities in transition: the Circum-Aegean area during the 5th and 4th millennia BC: 77–88. Oxford: Oxbow.*

Knežević 1964 – Knežević, S., 1964. Исхрана [Nutrition]. *Гласник Етнографског музеја* 27: 275–302.

Marinova 2005 – Marinova, E. 2005. Archäobotanische Untersuchungen, in S. Hiller & V. Nikolov (ed.) *Tell Karanovo. Die Ausgrabungen im Nordsüd-Schnitt, 1993–1999* (Band 4): 411–420. Wien: Phoibos Verlag.

Orton 2008 – Orton, D. 2008. *Beyond hunting and herding: humans, animals and the political economy of the Vinča period*. Unpublished PhD dissertation, University of Cambridge, Cambridge.

Orton et al. 2016 – Orton, D., J. Gaastra and M. Vander Linden. 2016. Between the Danube and the Deep Blue Sea: zooarchaeological meta-analysis reveals variability in the spread and development of Neolithic farming across the western Balkans. *Open Quaternary 2*: p. 6.

Orton et al. 2021 – Orton, D., J. Bulatović and I. Dimitrijević. 2021. Evidence for animal use in the central Balkan Neolithic across the early metallurgical horizon: the animal remains from Belovode and Pločnik in context, in M. Radivojević, B.W. Roberts, M. Marić, J. Kuzmanović-Cvetković and Th. Rehren (ed.) *The rise of metallurgy in Eurasia*: 585–598. Oxford: Archaeopress.

Palmer and Van der Veen 2002 – Palmer, C. and M. Van der Veen. 2002. Archaeobotany and the social context of food. *Acta Palaeobotanica* 42: 195–202.

Perlès and Viteli 1999 – Perlès, C. and K.D. Vitelli. 1999. Craft specialization in the Neolithic of Greece, in P. Halstead (ed.) *Neolithic society in Greece*: 96–106. Sheffield: Sheffield Academic Press.

Porčić 2012 – Porčić, M. 2012. *De facto* refuse or structured deposition? House inventories of the Late Neolithic Vinča culture. *Starinar* LXII: 19–43.

Radivojević et al. 2010 – Radivojević, M., T. Rehren, E. Pernicka, D. Šljivar, M. Brauns and D. Borić. 2010. On the origins of extractive metallurgy: new evidence from Europe. *Journal of Archaeological Science* 37: 2775–2787.

Raczky et al. 2020 – Raczky, P., A. Füzesi, K. Sebők, N. Farrago, P. Csippán and A. Anders. 2020. A special house from the Late Neolithic tell settlement of Berettyóújfalu-Herpály (Hungary), in S.W.E. Blum, T. Efe, T.L. Kienlin and E. Pernicka (ed.) *From Past to Present. Studies in Memory of Manfred O. Korfmann*: 429–457. Bonn: Habelt.

Rice 1981 – Rice, P.M. 1981. Evolution of specialised pottery production: A trial model. *Current Anthropology* 22(3): 219–240.

Rösch 1998 – Rösch, M. 1998. The history of crops and crop weeds in south-western Germany from the Neolithic period to modern times, as shown by archaeobotanical evidence. *Vegetation History and Archaeobotany* 7: 109–125.

Russell 1993 – Russell, N. 1993. *Hunting, herding and feasting: human use of animals in Neolithic south-east Europe*. Unpublished PhD dissertation, University of California, Berkeley.

Sievers and Wadley 2008 – Sievers, C. and L. Wadley. 2008. Going underground: experimental carbonization of fruiting structures under hearths. *Journal of Archaeological Science* 35: 2909–2917.

Souvatzi 2012 – Souvatzi, S. 2012. Between the individual and the collective: Household as a social process in Neolithic Greece, in B.J. Parker and C.P. Foster (ed.) *New perspectives on household archaeology*: 15–43. Winona Lake, Indiana: Eisenbrauns.

Stevanović 1997 – Stevanović, M. 1997. The age of clay: The social dynamics of house destruction. *Journal of Anthropological Archaeology* 16: 334–395.

Tasić 2007 – Tasić, N.N. 2007. Ritual pottery set from Vinča. *Journal of the Serbian Archaeological Society* 23: 203–210.

Tasić et al. 2007 – Tasić, N.N., S. Đuričić and B. Lazarević. 2007. Construction analysis of a quern from structure 01/06 at Vinča. *Journal of the Serbian Archaeological Society* 23: 211–218.

Tasić et al. 2015 – Tasić, N., M. Marić, K. Penezić, D. Filipović, K. Borojević, D. Borić, P. Reimer, N. Russell, A. Bayliss, A. Barclay, B. Gaydarska and A. Whittle. 2015**.** The end of the affair: formal chronological modelling for the top of the Neolithic tell of Vinča-Belo Brdo. *Antiquity* 89: 1064–1082.

Tasić et al. 2016 – Tasić, N., M. Marić, D. Filipović, K. Penezić, E. Dunbar, P. Reimer, A. Barcley, A. Bayliss, B. Gaydarska and A. Whittle. 2016. Interwoven strands for refining the chronology of the Neolithic tell of Vinča-Belo Brdo, Serbia. *Radiocarbon* 58: 795–831.

Tringham 1992 – Tringham, R. 1992. Life after Selevac: Why and how a Neolithic settlement is abandoned. *Balcanica* 23: 133–145.

Tringham 2005 – Tringham, R. 2005. Weaving house life and death into places: a blueprint for hypermedia narrative, in D. Bailey, A. Whittle & V. Cummings (ed.) *(Un)settling the Neolithic*: 98–111. Oxford: Oxbow.

Tringham and Krstić 1990 – Tringham, R. and D. Krstić. 1990. Conclusion: Selevac in the wider context of European prehistory, in R. Tringham and D. Krstić (ed.) *Selevac: A Neolithic village in Yugoslavia*: 567–616. Los Angeles: University of California.

Tringham et al. 1992 – Tringham, R.E., B. Brukner, T. Kaiser, K. Borojević, Lj. Bukvić, P. Šteli, N. Russell, M. Stevanović and B. Voytek. 1992. Excavation at Opovo, 1985–1987: Socioeconomic change in the Balkan Neolithic. *Journal of Field Archaeology* 19(3): 351–386.

Twiss et al. 2008 – Twiss. K.C., A. Bogaard, D. Bogdan, T. Carter, M.P. Charles, S. Farid, N. Russell, M. Stevanović, E.N. Yalman and L. Yeomans. 2008. Arson or accident? The burning of a Neolithic house at Çatalhöyük, Turkey. *Journal of Field Archaeology* 33: 41–57.

Valamoti 2015 – Valamoti, S.M. 2015. Harvesting the 'wild'? Exploring the context of fruit and nut exploitation at Neolithic Dikili Tash, with special reference to wine. *Vegetation History and Archaeobotany 24*, 35–46.

Vasić 1932 – Vasić, M. 1932. *Preistoriska Vinča 1*. Beograd: Državna štamparija Kraljevine Jugoslavije.

Vasić 1936a – Vasić, M. 1936a. *Preistoriska Vinča 2*. Beograd: Državna štamparija Kraljevine Jugoslavije.

Vasić 1936b – Vasić, M. 1936b. *Preistoriska Vinča 3*. Beograd: Državna štamparija Kraljevine Jugoslavije.

Vasić 1936c – Vasić, M. 1936c. *Preistoriska Vinča 4*. Beograd: Državna štamparija Kraljevine Jugoslavije.

Vitezović and Antonović 2020 – Vitezović, S. and D. Antonović. 2020. Functional differentiation and possible regional specialisation of the Vinča culture settlements: viewpoint

from osseous and lithic industries. *Quaternary International* 539: 39–48.

Wiltshire 1995 – Wiltshire, E.J.P. 1995. The effect of food processing on the palatability of wild fruits with high tannin content, in H. Kroll and R. Pasternak (ed.) *Res Archaeobotanicae*: 385–397. Kiel: Institut für Ur- und Frühgeschichte.

Wright 2003 – Wright, P. 2003. Preservation or destruction of plant remains by carbonization? *Journal of Archaeological Science* 30: 577–583.

Zavišić et al. 2017 – Zavišić, N., G. Đurić and B. Bosančić. 2017. Morphological and pomological characteristics of wild pears in the north-western part of Bosnia and Herzegovina. *Agro-knowledge Journal* 18: 249–262.

Резиме: ДРАГАНА ФИЛИПОВИЋ, Универзитет у Килу, Институт за праисторију и протоисторију, Немачка
МИРОСЛАВ МАРИЋ, Српска академија наука и уметности, Балканолошки институт САНУ, Београд
НЕНАД ТАСИЋ, Универзитет у Београду, Филозофски факултет, Одељење за археологију, Београд

УЖАРЕНИ ТЕЛ: АРХЕОБОТАНИЧКИ ОСВРТ НА ПАЉЕЊА КУЋА И ДРУШТВЕНО-ЕКОНОМСКЕ ОДНОСЕ У НЕОЛИТСКОМ НАСЕЉУ У ВИНЧИ (ЈИ ЕВРОПА)

Кључне речи. – Неолит, Винча – Бело брдо, паљење кућа, археоботаника, економија хране, домаћинство, друштвени односи

Гореле куће су редован налаз на локалитетима винчанске културе. До сада су у оквиру студија ове појаве махом анализирани остаци архитектуре и покретни материјал, као основа за реконструкцију практичних аспеката горења и његових могућих узрока, те шири друштвени контекст овог феномена. Поред археолошких анализа, експериментално паљење реплика неолитских кућа омогућило је увид у процес горења, количину и тип материјала који је могао да послужи као гориво, као и количину и тип архитектонских елемената и употребних предмета који могу остати видљиви након пожара. До сада ниједна студија није детаљно размотрила археоботаничке остатке из горелих кућа као потенцијални извор информација о овој појави и њеној могућој друштвено-економској позадини. Овај рад посматра археоботаничке остатке откривене у неколико горелих кућа датованих у последње фазе неолитског насеља на локалитету Бело брдо у Винчи. У центру пажње су две врсте материјала – зрна двозрне пшенице (*Triticum dicoccum*) и плодови дивље крушке (*Pyrus pyraster*) – који су овде присутни у великим количинама, за разлику од већине других врста биљних остатака откривених у датим кућама. Упоредо са археоботаничком анализом, рад разматра контекст налаза биљних остатака у односу на архитектуру и поједине покретне налазе. Комбинација ранијих запажања и закључака о горелим неолитским кућама, резултата претходних анализе кућа на Винчи и овде представљених података нуди јединствену могућност реконструкције околности у којима се одвијало горење кућа на Винчи. На основу стања очуваности архитектонских и археоботаничких остатака, закључак је да је паљење ових кућа било планирано, односно – да је постојала намера да куће и њихов покретни и непокретни инвентар буду уништени у пожару. Релативно велике количине пшенице и крушки указују на значајно место ових ресурса у економији и исхрани чланова домаћинстава којима су куће припадале, те могућност да је већ у неолиту развијана брига о дивљим изворима хране, попут крушке, паралелно са узгојем пољопривредних врста. Археолошки контекст биљних налаза открива да су дивљи и домаћи извори биљне хране чувани у кућама, у керамичким посудама, корпама и/или врећама. Значајно присуство двозрне пшенице и крушке, макар у анализираним кућама, указује на могућност да су ова два ресурса била основ економије за поједина домаћинства, која су се „специјализовала" за њихову производњу и/или су пшеница и крушке имале изузетно важно место у њиховој исхрани. У контексту претходно уочених друштвених кретања пред крај винчанске културе, која су подразумевала све израженију аутономију домаћинства у односу на заједницу, те разлике међу домаћинствима и заједницама у погледу избора сировина за израду предмета или у погледу активности, могуће је да су разлике постојале и у сфери производње хране и исхране. Оваква диференцијација могла је да буде средство којим су домаћинства истицала своју специфичност и „различитост" у односу на остатак заједнице. Уколико је то био случај, могуће је да та пракса није била друштвено прихваћена и да је намерно паљење кућа представљало механизам којим су разлике међу домаћинствима (и њихова аутономија) негиране и стављане под контролу заједнице.

UDC: 903.4"637"(497.11)
903.25-032.42"637"(497.11)
902.2(497.11)"2022"
https://doi.org/10.2298/STA2373027B
Original research article

ALEKSANDAR BULATOVIĆ, Institute of Archaeology, Belgrade
ALEKSANDAR KAPURAN, Institute of Archaeology, Belgrade
OGNJEN MLADENOVIĆ, Institute of Archaeology, Belgrade
PETAR MILOJEVIĆ, Institute of Archaeology, Belgrade
MAJA GAJIĆ-KVAŠČEV, Vinča Institute of Nuclear Sciences, National Institute of the Republic of Serbia, Department of Chemical Dynamics and Permanent Education, Belgrade

SET OF BRONZE JEWELLERY FROM THE SITE OF VELIKA HUMSKA ČUKA NEAR NIŠ, SE SERBIA

A contribution to the study of interactions between Bronze Age communities of Central Europe and the Central Balkans*

e-mail: abulatovic3@gmail.com

Abstract. – The paper presents an extraordinary new find from the site of Velika Humska Čuka near Niš, in south-eastern Serbia. During the 2022 excavation campaign, a set of bronze jewellery was discovered, comprised of a pin, a band, ten saltaleoni, and ten circular pendants. Of particular importance are the finds of circular pendants, which are known throughout the Bronze Age in the territory of Europe. Such pendants are traditionally connected with Central Europe and the Hügelgräber culture, therefore representing an uncommon find for the Central Balkans. The paper provides a stylistic and typological analysis of jewellery, complemented with physical and chemical analyses, and further discusses the scope and effects of interactions between Central Europe and Central Balkans during the Bronze Age.

Key words. – South-eastern Europe, Central Europe, Balkans, Velika Humska Čuka, Late Bronze Age, Hügelgräber, bronze jewellery, cultural transmission

It is quite rare to discover a hoard or a set of metal objects in the course of archaeological excavations. Such finds are usually found by chance, during construction, agriculture, or similar work, and ordinarily end up in local museums. Or at least that is how it was several decades ago, when people who found such items regularly reported them, gifted or sold them to local museums for a symbolic fee.[1] Lately, however, more and more "treasure hunters" use modern metal detectors to scavenge for valuable finds, in order to sell them abroad, therefore selfishly alienating the national treasure for a petty profit.

Hence, it is true archaeological luck to find a hoard of metal objects during archaeological excavations and record and document it according to all archaeological regulations and using the appropriate methodology.

Such a rare case occurred during the 2022 excavation campaign at the site of Velika Humska Čuka in the village of Hum near the present-day city of Niš.[2]

***

The site of Velika Humska Čuka is located on a dominant calcareous plateau in the north-eastern periphery of the village of Hum, approximately 7 km north

[1] Гарашанин 1954; Гарашанин, Тасић (ур.) 1975; Гарашанин, Тасић (ур.) 1994; Вукмановић, Радојчић 1995.

[2] The research is carried out by the Institute of Archaeology in Belgrade and the National Museum in Niš. It is funded by the Ministry of Culture and Information of the Republic of Serbia, the City of Niš and the Municipality of Crveni krst of the City of Niš.

* This paper is the result of the project *THE FLOW – Interactions-Transmission-Transformation: Long-distance connections in Copper and Bronze Age of the Central Balkans*, funded by the Science Fund of the Republic of Serbia (Programme IDEAS, Grant no. 7750074).

Manuscript received 26th January 2023, accepted 2nd August 2023



Fig. 1. Velika Humska Čuka, drone view from the east (Documentation of the Institute of Archaeology, Belgrade)

Сл. 1. Велика хумска чука, снимак дроном са истока (Документација Археолошког института у Београду)

of the present-day city of Niš.[3] The upper and highest plateau spreads in an east-west direction, with an approximate length of 120 m, and a width (north-south) of 90 m, therefore covering an area of around 1 ha (Fig. 1). The Hum River, nowadays a small watercourse, borders the site on the northern and western sides. The site itself is highly inaccessible from all sides but the northern, which connects it to the neighbouring Mala Čuka. Compared to the bank of the Hum River (333 m a.s.l.), the elevation to the highest point of the central plateau (around 455 m a.s.l.), is slightly above 120 m. Below the highest plateau, on its western side, at an altitude of 400 m, several small cavelets and a cave have been recorded. Unfortunately, the entry to the cave collapsed, and it was never explored.[4] The site of Mala Humska Čuka lies approximately 400 m to the north. It is an elevated plateau, geologically similar to Velika Humska Čuka, although significantly smaller. Archaeological finds have also been recorded on the surface of Mala Humska Čuka, along with brick-built graves.[5]

The site of Kremenac, known for the exploitation of raw stone materials (flint) for the chipped stone industry, lies around 2 km to the west. A clay pit, which is nowadays occasionally used for the repair of old houses and other facilities in the village, is located 300–400 m northwest of the site.[6]

Visually, the site of Velika Humska Čuka covers most of the Niš Basin, the southern entry to the basin through the Koprijan Gorge, and the narrow pass towards the north (Mezgraj Gorge), between the eastern slopes of Mali Jastrebac and the western slopes of the Kalafat Mountains. Due to such a favourable geo-strategic position of the site, with suitable natural defensive characteristics such as calcareous slopes, and various other natural advantages, the site was almost continuously inhabited for six millennia, from the Early Eneolithic to the medieval period.[7]

---

[3] Булатовић, Милановић 2015.

[4] Гарашанин, Гарашанин 1959.

[5] Small trench surveys were conducted at the site during the 1980s. The data on the results of excavations was provided by the members of the excavations team, the former curator of the National Museum in Niš, Natalija Đurić, and M. Veljković, an architect from the Institute for the Protection of Cultural Monuments in Niš, to whom we would like to offer our thanks on this occasion.

[6] We would like to thank our associate from Hum, Slaviša Žikić, for this information.

[7] Булатовић, Милановић 2015; Bulatović, Milanović 2021.

The earliest data on the site was collected by the former Niš City Museum, although interest in the site was intensified following the surveys in 1933, which were conducted in collaboration with the American Expedition in Yugoslavia, led by V. Fewkes.[8] Familiar with the potential of the site, V. Grbić started an initiative for the first archaeological excavations, which were realised the following year by the National Museum in Belgrade.[9] Finds from those excavations are in the National Museum in Belgrade yet, unfortunately, the documentation from the excavations disappeared during the Second World War. The next excavations were carried out by M. Garašanin at end of the 1950s. Based on the results of those excavations, and the results of excavations from the nearby site of Bubanj, he defined a new archaeological culture named after those two sites, the Bubanj-Hum culture, which was soon after accepted within the European archaeological literature.[10]

After a half-century-long break, the excavations were resumed in 2009, by the Institute of Archaeology in Belgrade and the National Museum in Niš.[11]

The Discovery

The stratigraphy of the site is complex, since the average depth of the cultural layer is 1.2 m, with the site being settled continuously for almost six millennia. Therefore, the younger layers often penetrated the earlier, which had a destructive outcome in terms of the preservation of residential structures and other archaeological features. The earliest settlement, which was erected on the original rocky base of the site, originates from the Early Eneolithic, or more precisely the mid-5th millennium cal BC. This settlement displays a high level of preservation, save for particular spots in which deep late antique pits were dug. Those pits often penetrated all of the cultural layers, reaching the rock, and were sometimes even chiselled more than a half meter into the rock. Up until now, the remains of five Early Eneolithic houses have been excavated (45th–40th century cal BC),[12] and an unexpected find occurred during the excavation of the last house, in 2022.

In a 10 x 6 m trench, within the southern periphery of the site (Fig. 1), in a layer of debris of the Early Eneolithic house, a group of metal objects was discovered within a small oval pit (Fig. 2, green star; Fig. 3a). The pit was not detected within the upper layers, since its infill was almost identical to the surrounding area, comprised of small pieces of burnt daub and burnt red soil mixed with brown soil. The largest portion of a bronze band was recorded first. The band was laid in line with the north-western fringe of the pit. The second discovery was a pin that was positioned transversely (northwest-southeast) to the orientation of the band (approximately northeast-southwest), at its north-eastern end (Fig. 3b). Southwest of the band, next to it and several centimetres deeper, pendants and *saltaleoni* were recorded. These were densely distributed one next to the other or one on top of the other, and one of the *saltaleoni* was in its original position, connected to a pendant by corrosion (Pl. I/1). Judging by the position of pieces of this set of metal objects, it can be assumed that the set represents a necklace comprised of circular pendants with *saltaleoni* in between. The necklace was not spread out, but rather simply put down from the top, therefore causing the pendants to stack on top of each other. Also, there is a possibility that the necklace was laid down within a sack made of organic material and sealed with a pin, which could explain the dense distribution of pendants and *saltaleoni* (Fig. 3b). The complete set was buried with the previously dug out content, comprised of reddish-brown soil and pieces of burnt daub from the Early Eneolithic house. Considering the relative depth of the find (approximately 0.7 m from the surface level), and the cultural stratigraphy above the hoard, the dig was not deep, with a possible depth of between 25 and 30 cm. A zone of compacted and more or less levelled soil was recorded approximately 20 cm above the highest point of the hoard (the top of the bronze band). This feature had an irregular shape, and its south-eastern portion was not precisely defined (Fig. 2). The archaeological material recorded within the layer of this feature is attributed exclusively to the Middle Bronze Age, which indicates that the feature did not spread further to the southeast, above the hoard, which is certainly younger than those finds. The layer above the aforementioned feature with compacted soil yielded Late Bronze Age pottery, which could chronologically correspond to the hoard. According to the stratigraphy, therefore, the hoard was dug in from the Late Bronze Age layer

[8] Fewkes 1934: 54.

[9] Garašanin, Garašanin 1959; Petrović 2005: 63.

[10] Garašanin 1958; Гарашанин, Гарашанин 1959.

[11] The excavations are funded by the Ministry of Culture of the Republic of Serbia, the City of Niš, and the municipality of Crveni Krst. We would like to take this opportunity to thank them.

[12] Bulatović *et al*. 2020; Bulatović, Milanović 2021.

[13] Letica 1973, 75, T. IX/5.

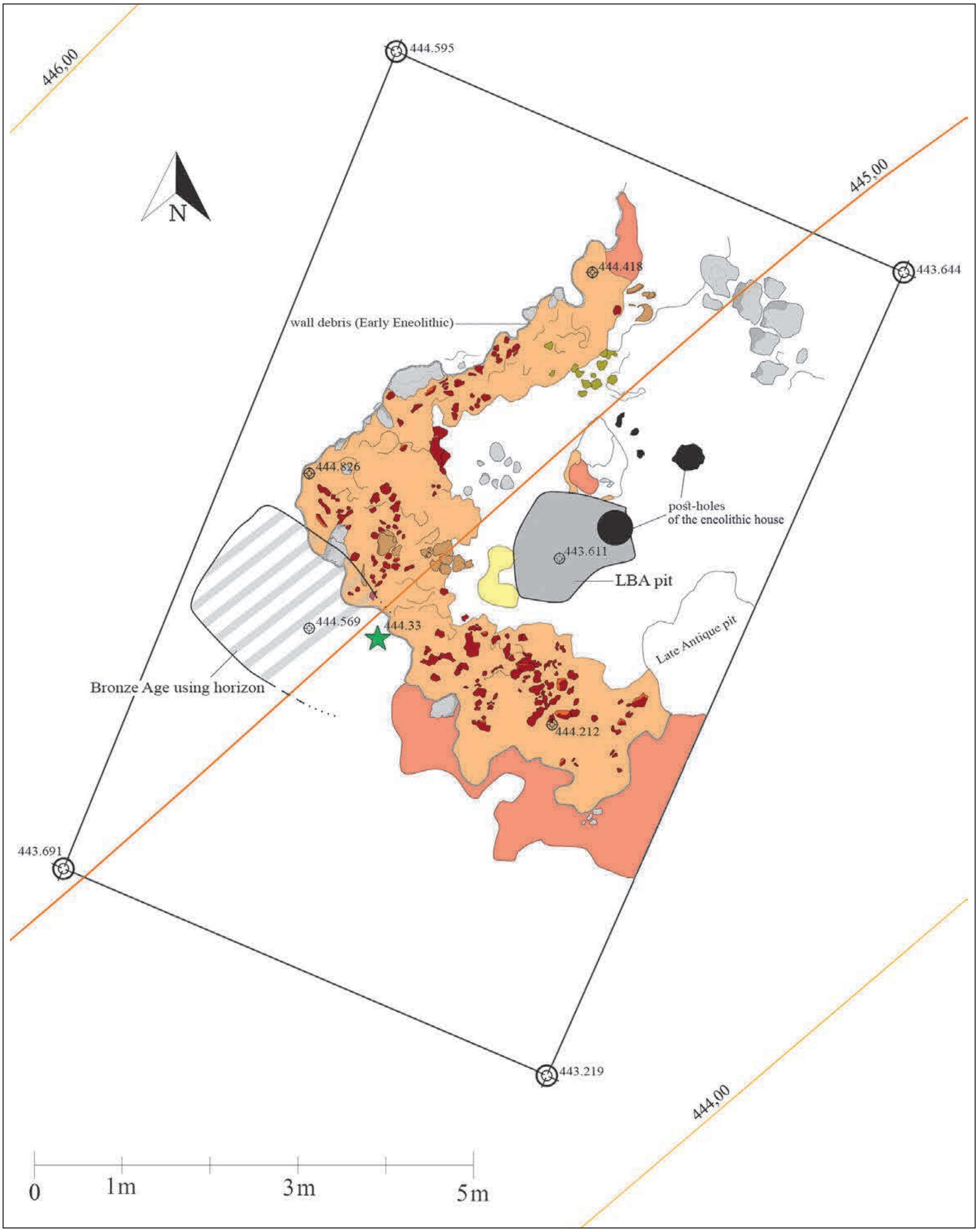


Fig. 2. Plan of trench 1/22 with remains of the Eneolithic house, LBA pit, Bronze Age usage horizon and LBA hoard (green star) (Documentation of the Institute of Archaeology, Belgrade)

Сл. 2. Скица сонде 1/22 са остацима енеолитске куће, јаме из позног бронзаног доба, хоризонта насељавања и оставе из позног бронзаног доба (Документација Археолошког института у Београду)





Fig. 3. LBA hoard: a) dug into Eneolithic house, view from the north;
b) detail, view from the southeast (a pin is added to the photo in the original position in which the hoard was found)
(Documentation of the Institute of Archaeology, Belgrade)

Сл. 3. Остава позног бронзаног доба: а) укопана у енеолитску кућу, поглед са севера;
б) детаљ, поглед са ЈИ (игла је додата на фотографију у оригиналној позицији у којој је нађена)
(Документација Археолошког института у Београду)

A circular pit dug into the remains of the Early Eneolithic house was recorded in the vicinity of the hoard, approximately 2 m to the southeast. The pit was dug into the house rubble and floor, all the way to the rock. The pit was not detected in the original level, due to its surroundings and infill, comprised of house rubble, but it was detected near its bottom, where it penetrated the house floor. The pit contained several large Late Bronze Age potsherds, which correspond to the layer above the layer on the zone of compacted soil.

The Inventory of the Hoard

The hoard comprised 10 circular pendants with a knob in the middle, 10 *saltaleoni*, one folded bronze band, and a pin with a nail-shaped head (Pl. I).

The circular pendants have quite uniform dimensions, and the existing differences in the outer diameters and heights of the central knobs could rather be the result of a different state of preservation than a different mould. The height (with bent part-tube for fixing to *saltaleoni* on top) is between 40 and 43 mm, the diameter between 36 and 39 mm, and the thickness with the central knob is between 4 and 13 mm. The thickness of the bronze sheet is uniform and measures approximately 4 mm.

The back surface of the pendants is flat, save for a narrow band for the fixing of *saltaleoni*, which is bent backward to form a tube. The front surface of the pendants is decorated with three concentric circular ribs and a knob in the middle, with a height of between 3 and 9 mm.

The dimensions and form of the pendants indicate that all of the examples are made in the same mould. Namely, the outer diameter of the narrowest circular rib measures 16 mm in all of the examples, while the outer diameter of the middle rib measures around 25 mm. The outer diameter of pendants varies between 2 to 3 mm, depending on the state of preservation.

The hoard contained 10 pieces of spirally twisted bronze wire that formed tubes (*saltaleoni*), of which one was still attached to the upper backward bent part of the circular pendant, therefore indicating the original position of *saltaleoni* in relation to pendants. Such a position suggested that the *saltaleoni* connected the circular pendants to form a composite necklace. Most of the *saltaleoni* have 11 segments (5 examples), while others have 12 (one example), 13 (two examples), and 15 and 7 segments (one example) (the latter possibly being the result of damage). The lengths of the *saltaleoni* vary between 30 and 53 mm, depending on the number of segments, while the diameter of the segments and the thickness of the wire are identical in each example, measuring 5 and 2 mm respectively. Interestingly, the longest *saltaleone* (Pl. I/16) is bent at a 140° angle, five examples were slightly bent, and four examples were completely straight. This could be explained as a process of forming the necklace, meaning the arc between the first and the last pendant, where

%	**Pendant** (Pl. 1/6)	**Pendant** (Pl. 1/9)	**Saltaleone** (Pl. 1/16)	**Band** (Pl. 1/21)	**Pin** (Pl. 1/20)
Cu	89.42	88.03	89.92	87.32	88.9
Sn	8.90	9.71	7.72	9.34	8.91
As	1.00	0.97	0.75	0.96	0.72
Fe	-	0.84	0.8	0.25	0.24
Ni	0.51	0.38	0.28	0.88	0.72
Zn	0.17	0.04	-	0.11	-
Sb	-	-	-	0.80	0.27

Table 1. Elemental composition of several bronze finds from the hoard

Табела 1. Елементарни састав неколико бронзаних предмета из оставе

the longest *saltaleone* was in the middle of the necklace, thus forming the greatest curve (angle). However, it is possible that the pieces were secondarily bent due to damage. Judging by the form, angle, and length of the *saltaleoni*, the ends of the necklace were not connected, and the necklace itself was most likely hung on the shoulders, which can be observed on certain Late Bronze Age anthropomorphic figurines. Namely, the figurine from Golubac (Pl. III/2) wears an almost identical necklace on the chest, composed of the same number of pendants connected with wire (*saltaleoni*?), with the ends positioned on the shoulders.[13] However, if the pendants were connected with *saltaleoni*, and the necklace ended with *saltaleoni* on both ends, it remains unclear why there are not 11 pieces, which suggests that either one piece is missing, or that the necklace ended with a pendant at one end, and a *saltaleone* at the other.

The pin from the hoard is 198 mm long and 5 mm thick (Pl. I/20). The head of the pin has an irregular circular shape with a maximum diameter of 12 mm. The head is not placed on the pin with its central portion, as it is slightly off centre compared to the axis of the pin body. A horizontally positioned circular perforation is located approximately 8 mm below the pin head, with a diameter of 1 mm. The upper two-thirds of the pin body have a rectangular, almost square cross-section, while the lower third has a circular cross-section. The lower two-thirds of the pin body are slightly bent in a wavy manner. The pin could be attributed to a type with a nail-shaped head (*Nagelkopfnadeln*), although there are no direct analogies due to its square cross-section, perforation below the pin head, and the position of the head compared to the body axis, which all suggests a semi-finished product.

The last object from the hoard is a long bronze band that has been folded several times (Pl. I/21). The length of the folded band is around 360 mm, while the approximate length of the straightened band is 1430 mm. The width of the band is 6 mm, and the thickness is 2 mm. It is unclear whether the band represents a piece of jewellery, such as a waist or shoulder band, which could hold various pendants, or raw material for the production of jewellery or other bronze objects. Similar bands have been recorded within hoards of the Danube region, and their function is likewise unclear.[14]

Chemical Properties of the Inventory

A number of pieces from the hoard have undergone chemical analyses of their elemental composition using a Hitachi X-MET8000 Optimum handheld XRF spectrometer at the Vinča Institute of Nuclear Sciences, Department of Chemical Dynamics and Permanent Education.[15] A total of five pieces have been analysed – a pin, a bronze band, one *saltaleone*, and two circular pendants. The pieces were freed from corrosion, in order to examine their chemical composition as precisely as possible, without interference from corrosion, patina, and other impurities. The analyses have shown that, besides copper and tin, all of the objects have arsenic and nickel in their composition, while iron was detected in all of the analysed pieces except for one pendant. Zinc was detected in both pendants and the

[14] The hoard from Šimanovci contained several similar bands of unknown function (Поповић 1975, T. XLVIII), although similar bands have been recorded in hoards as parts of unravelled spiral applications and other decorative objects (T. XX/2, T. XXXVIII).

[15] We would like to take this opportunity to thank Velibor Andrić for the analyses.

band, and antimony in the band and pin (Tab. 1). The percentage of tin in the analysed pieces varies between 7.72% and 9.71%, and one pendant and the pin have an almost identical amount (8.90% and 8.91%). It is interesting that all of the pieces have an almost identical percentage of arsenic, 0.72–1%, which, after accounting the uncertainty of the measurements, could indicate that all of the pieces were made from copper of the same origin. This is highly possible for the analysed pendants, since all of the elements except for iron are approximately equally abounded, as is the aboundance of tin. Based on the similar content of tin, and the high probability that the pendants originate from the same mould, it can be assumed that these were manufactured in the same workshop, which could also be assumed for other pieces, although with less certainty.

Therefore, based on the XRF analyses, it can be concluded that the analysed pieces were made of tin-bronze, and that their chemical composition is quite uniform. Based on the representation of certain elements, it is highly possible that the two analysed pendants were made using the same raw material.

Function, Cultural and Chronological Parallels

All objects from the hoard except the band represent pieces of jewellery. The necklace comprised of ten circular pendants with a central knob and ten *saltaleoni* is almost identical to a necklace represented on an anthropomorphic figurine from Golubac, attributed to the Žuto Brdo culture (Pl. III/2).[16] The necklace on the figurine is represented as ten concentric circles with emphasised centres, on the chest of the figurine. The tops of the circles are connected with a semi-circular line, which most likely represents *saltaleoni* or a string. Besides the necklace, the figurine displays other decorations that represent jewellery or ornaments on clothing. This affirms the assumption that Bronze Age figurines from this region, and especially the Serbian Danube region, attributed to the Žuto Brdo-Girla Mare group, include representations of pieces of jewellery.[17] This type of necklace is represented on a number of other figurines, such as the examples from Klenovnik, Žuto Brdo, Krna, and others (Pl. III/1–3). An additional argument for the representation of jewellery on figurines attributed to the Žuto Brdo culture are representations of lunular pendants (Pl. III/4–6), which have been recorded in identical forms throughout Central Europe and the Serbian Danube region during the Middle and Late Bronze Age.[18] A stone mould for lunular pendants, identical to the representations on figurines was recorded during the 2022 rescue archaeological excavations at the site of Žuto Brdo in Radoševac near present-day Golubac (Pl. III/7). Another mould originates from grave 80 at the Velebit necropolis near present-day Kanjiža,[19] and a third example comes from the site of Velesnica.[20]

The most indicative finds from the Velika Humska Čuka hoard are circular pendants with a central knob and concentric ribs (*Stachelscheibenanhänger* or *Stachelscheibe*), which, together with *saltaleoni,* formed a necklace.

According to G. Schumacher-Matthäus, there are three types of such pendants, types A, B, and C. Pendants with wide ribs and blunt thorns are attributed to type A, pendants with wide ribs and sharp thorns are attributed to type B, and type C is characterised by pendants with narrow ribs and a sharp thorn.[21] According to B. Hansel, such pendants can be separated into examples with a central thorn (long point), and those with a central knob (small knob-shaped or cone-shaped ornament in the centre).[22] Within the typology proposed by B. Hansel, pendants from Velika Humska Čuka would be attributed to the type with a knob, or type A according to the Schumacher-Matthäus typology. The author further elaborates that types A and B could not be precisely defined in terms of cultural and chronological attribution, while type C is connected with the Carpathian *Hügelgräber* (Tumulus) culture. Judging by the position of pendants within graves, she considered them to represent chest jewellery, and since all of the analysed deceased with pendants were females, she concludes that those represent a female piece of jewellery. As some of the *saltaleoni*, usually recorded with the pendants, were connected with pendants, similar to one of the examples from Velika Humska Čuka, the author suggested that the *saltaleoni* were used to form a connection between the pendants

16 Letica 1973, T. IX/5.

17 Letica 1973; Schumacher-Matthäus 1985; Peković 2013.

18 Bona 1975; Wels-Weyrauch 1991; Vasić 2010.

19 Kapuran 2019a, 88, Fig. 81.

20 Васић, Ерцеговић-Павловић, Минић 1984, сл. 110/4.

21 Schumacher-Matthäus 1985, 100–101.

22 Hänsel 1968, 225–226. It is difficult to differentiate the examples since a large number of published illustrations do not present the cross-section, and authors often use the same term for thorn and knob.

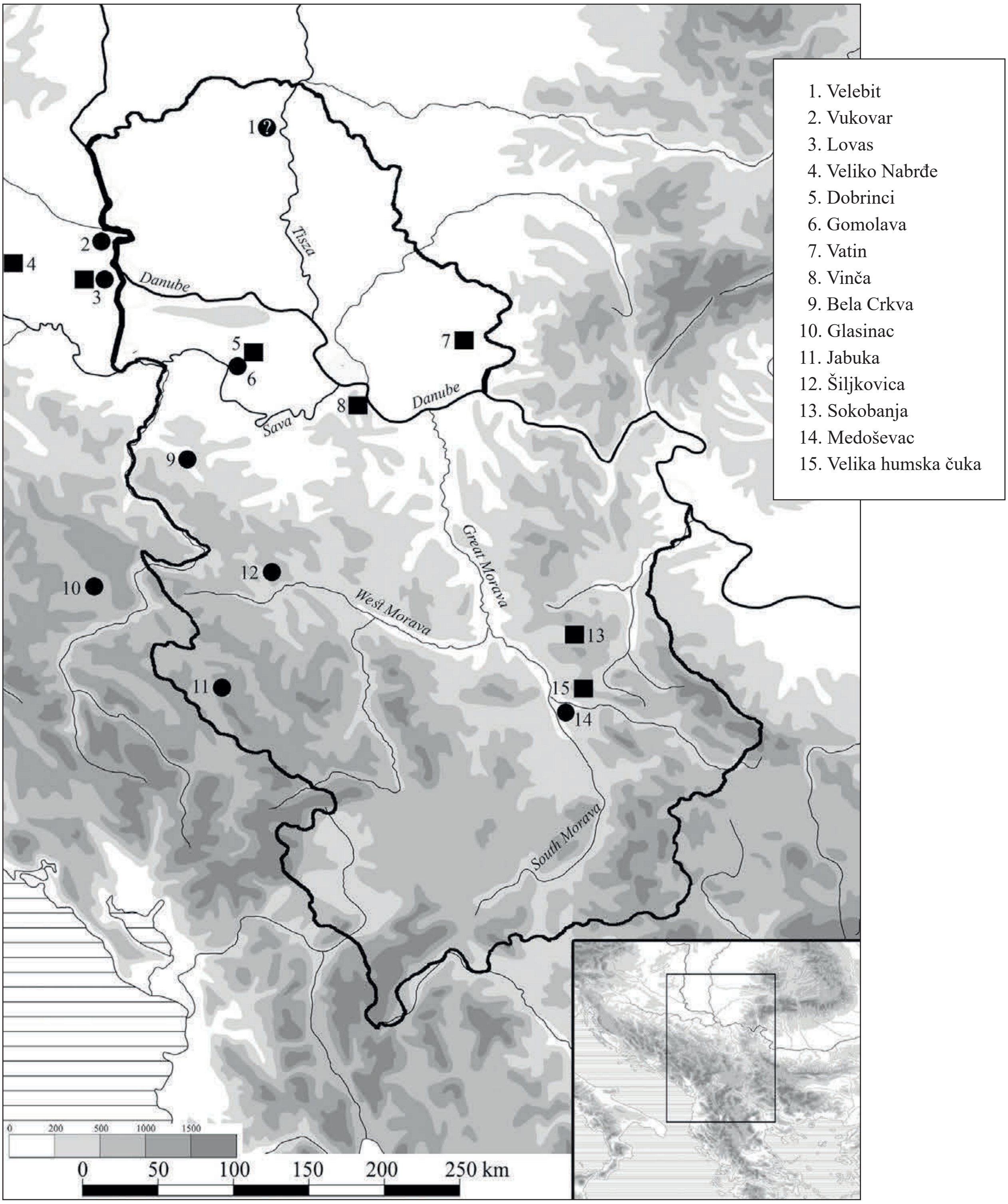


Fig. 4. Distribution of circular pendants with central thorn/knob in the Balkans
Squares: *Circular pendants with central knob;* ***Dots:*** *Circular pendants with central thorn*
(The background of the map was made by M. Milinković)

Сл. 4. Расūросūрањеносū кружних ūривезака са ценūралним ūрном/дуīмеūом на Балкану
квадраūи: *кружни ūривесци са ценūралним исуūчењем;* ***ūачке:*** *кружни ūривесци са ценūралним ūрном*
(ūозадину маūе је израдио М. Милинковић)

and to space them. *Saltaleoni* and pendants were most likely strung together on a string that was attached on the shoulders to a piece of clothing, possibly a cloak, since it represents the so-called cloak jewellery. The number of pendants varies from one to fourteen, with ten being the most usual number. The observations made by Schumacher-Matthäus have proven to be correct regarding the position and function of pendants and *saltaleoni*, and the number of pendants, at least when it comes to the necklace from Velika Humska Čuka. The author lists a large number of sites with such pendants, mostly necropolises, but also hoards, which sometimes contain more than 30 examples.[23] Such pendants have been registered over a vast area from Saxony and Bohemia in Central Europe (Fig. 5b),[24] to Little Alföld (Little Hungarian Plain), Great Hungarian Plain, and the Balkan Peninsula.

A large number of such pendants are known from Saxony, where they are characterised as female jewellery and separated into several types.[25] The form of pendants from Velika Humska Čuka has parallels in the *Becklingen* type from Saxony, although that type has four ribs, compared to three ribs in our examples. However, these parallels are not adequate, since the aforementioned type was in use earlier than in the Balkans, from the end of the Early Bronze Age to the beginning of the Late Bronze Age.[26]

In neighbouring Bohemia, such pendants, although with five ribs, were recorded within the Varvažov hoard, and connected with the *Hügelgräber* complex, the local Milavče-Knoviz culture. They are dated to the later phase of the Middle Bronze Age, meaning the Br C period, according to Reinecke. The author suggests that the pendants originate from the Middle Danube region, with distribution throughout Czechia, Bavaria, and south-western Germany.[27]

Within the Little Alföld (Little Hungarian Plain), in the Slovakian Danube region, circular pendants are often correlated with pins with uncentered nail-shaped heads and twisted lower portions (*Sichelnadeln*). The pendants usually possess two or three ribs and a central knob and, besides the aforementioned pins, *saltaleoni* are often found within graves.[28] These finds have been chronologically attributed to the Carpathian *Hügelgräber* culture (MBZ 2 and MBZ 3 according to Lichardus/Vladar), which would correspond to the Br B-C period, according to the Central European periodisation.[29]

Circular pendants with central thorns or knobs have also been recorded within the Carpathian Basin. In present-day Hungary, pendants with five concentric ribs have been recorded within the Hungarian Danube Basin, in graves of the Vatya culture, chronologically attributed to the Middle Bronze Age,[30] as well as at the Dunaújváros necropolis, in graves attributed to the late Koszider culture, although those examples possess only two concentric ribs.[31] Similar pendants are widely distributed throughout present-day Hungary, yet eight examples from the Alsonemedy hoard in the Hungarian Danube region south of Budapest are particularly interesting,[32] since those are almost identical to examples from Velika Humska Čuka, both in form and dimensions. Besides other objects, the hoard from Alsonemedy contained *saltaleoni*, as pieces of a necklace. Interestingly, a small set of finds was recorded in Szentendre, north of Budapest, which, besides other finds, contained a circular pendant with a central thorn and a pin with an uncentered nail-shaped head and a perforation in the upper portion of the body,[33] which closely resembles the example from Velika Humska Čuka. A hoard from Rákospalota near Budapest contained almost identical pendants, *saltaleoni*, and two pins with a slightly larger uncentered head and a perforation in the upper portion of the body.[34]

In Transylvania, which is geographically significantly isolated from the territories connected with the

[23] Schumacher-Matthäus 1985, 104, Tab. 74.

[24] Seidel 1995.

[25] Laux 2016, 135–136.

[26] However, it should be highlighted that regional variants of female graves, based on the selection of jewellery sets, are observable in the territory of Germany during the Middle Bronze Age (Southern Bavarian group, Upper Palatinate, Alb group, Hagenauer group, and Rhine-Main group). Each of the variants is represented by a specific combination of decorative items with characteristic stylistic and typological features (Seidel 1995, 82–83). The jewellery sets of all of these regional groups contain decorative pins and circular pendants with a thorn. The combination of pins and pendants within graves of the Hagenauer group, distributed in the Alsace and Lower Rhine regions, on the border between Germany and France, display the highest similarities with the hoard from Velika Humska Čuka.

[27] Kytlicová 2007, 205.

[28] Lichardus, Vladar 1998, Taf. 29, 32, 42.

[29] Lichardus, Vladar 1998, 296–297.

[30] Bona 1975, 51–56, Taf. 34/21, 35/12.

[31] Vicze 2011, pls. 206/4, 216/4. A typologically equivalent pendant was recorded in the Szentendre hoard north of Budapest (Mozsolich 1967, Taf. 44).

[32] Hänsel 1968, Taf. 22/5–13.

[33] Hänsel 1968, Taf. 23/11, 13.

[34] Csanyi et al. 1992, fig. 15.





Fig. 5a. Possible reconstruction of necklace with pin from Velika Humska Čuka (by A. Bulatović)
Fig. 5b. Jewellery set from a female grave from a mound near Großengstingen, Baden–Württemberg (south-western Germany)

Сл. 5а. Идеална реконструкција огрлице, са иглом, са Велике хумске чуке (фотографије и графичка обрада А. Булатовић)
*Сл. 5б. Сет накита из женског гроба из тумула код Гросенстингена (*Großengstingen*),* *Баден–Виртемберг* (Baden-Württemberg) *(ЈЗ Немачка)*

distribution of such pendants, the Danube region and the Hungarian Plain, an example almost identical to pendants from Velika Humska Čuka was recorded, with another similar example with two ribs. The pendant has three ribs and a central knob, and it was discovered within a large hoard of bronze objects in Uioara de Sus, and dated to the Ha A_1 period.[35] The hoard from Santu Mare within the eastern fringe of the Carpathian Basin, with three pendants with two ribs and a central knob, dated to the end of the Middle Bronze Age, suggests that such pendants were circulating in Romania prior to the Ha A_1 period.[36]

R. Vasić, who was most dedicated to Bronze Age metal finds in the Central Balkans, suggested that such pendants with cone-shaped thorns and three to five ribs belong to the second phase of development of such pendants, which could not be precisely chronologically defined.[37] Furthermore, he indicates that such pendants first appear in the territory of Central Europe during the Br B_1 period, according to the Central European chronology, and prevail during the Br C period, approximately when such pendants appear in the Balkans.[38]

In the synthesis of Late Bronze Age finds from Srem, regarding the pendants, D. Popović proposes a different dating of such finds, shifting their chronological position from Br B-C,[39] to a slightly younger Br D period.[40]

Within the Balkans, such pendants have been recorded mostly in the territory of Vojvodina, the Serbian Danube region, the Drina region (western Serbia and eastern Bosnia), and the South Morava Valley (Fig. 4). Pendants have been recorded in the Srem region (Dobrinci and Gomolava),[41] the Banat region (Vatin),[42] and in the area of the confluence of the Sava and Danube rivers (Vinča).[43] The examples from Vinča and Vatin are quite similar to the examples from Velika Humska Čuka, as those possess three ribs and a central knob (Pl. II/2, 3). However, pendants from the Srem region possess two and three ribs, and a central

35 Petrescu-Dîmboviţa 1977, 114–117, Pl. 247/26–27.
36 Gogaltan 1999, Figs. 33, 49.
37 Vasić 2010, 20.
38 Васић 1997, 40.
39 Popović 1996, 266–267.
40 Popović 1996, 265.
41 Popović 1994; Tasić 1965.
42 Васић 1997, 39, with cited literature.
43 Garašanin 1954, 70, T. LX/10.

thorn, while the example from Dobrinci could be defined as a pendant with a (shorter) thorn and (longer) knob (Pl. II/5, 11). Parallels for pendants from Velika Humska Čuka, in terms of the size of the knob and the number of ribs, are found in pendants from Slavonia, from Veliko Nabrđe and in one of six pendants from Lovas (Pl. II/10, 12–14), [44] as the example from Vukovar hoard possesses a knob, but only two concentric ribs (Pl. II/15).[45] The pendant from Bela Crkva has three ribs, similar to pieces from Velika Humska Čuka, but also possesses a long thorn (Pl. II/1).[46] The pendant from Šiljkovica in western Serbia (Pl. II/8) [47] is almost identical to pendants from Jabuka (Pl. II/9), although these examples differ from Velika Humska Čuka by the empty space on the edges of pendants and a long thorn. The pendant from Jabuka originates from the central construction of a mound, and most likely belongs to a disturbed grave of a cremated deceased. Besides four pendants, two long *saltaleoni* made of twisted wire have been recorded as well. [48] The author, similar to previous authors, suggests that pendants and *saltaleoni* formed a necklace,[49] and such a function of *saltaleoni* is confirmed by finds from Velika Humska Čuka.

Similar circular pendants with six and seven ribs with a missing thorn (or knob)[50] have been recorded in two graves at the Velebit necropolis (Pl. II/6–7),[51] while an example from Glasinac possesses four ribs and a long thorn (Pl. II/16).[52]

Geographically, the closest analogy for pendants from Velika Humska Čuka is in Medoševac, located approximately 6 km southwest of the site. It represents a chance find from a grave with an urn and the remains of a creamated deceased. Besides the circular pendant, the grave goods were comprised of cone-shaped applique, *Noppenrings*, rings made of bronze wire, a torque with spirally twisted ends, and others.[53] Although geographically close, typologically the pendant does not resemble the examples from Velika Humska Čuka, since it possesses six ribs and a long thorn. The grave from Medoševac is dated between the 14th and the 11th century cal BC.[54]

Another find of a pendant with a central knob is known from Sokobanja, which is relatively close to Velika Humska Čuka, although the example is solely known from a drawing by F. Holste.[55]

Regarding the pin with the nail-shaped head, it has been highlighted that the example from Velika Humska Čuka is uncommon for this type. The head of the pin is not in line with the axis of the pin body, and the upper portion of the pin has a square cross-section. Such pins, with uncentered heads and square cross-sections, although with twisted lower portions, have been recorded at necropolises within the Slovakian Danube region, in graves attributed to the *Hügelgräber* culture, in combination with circular pendants with a central knob.[56] These so-called sickle-shaped pins (*Sichelnadel*) are similar to the example from Velika Humska Čuka, and a similar pin with a nail-shaped head and a square cross-section was recorded within the Tăşad hoard in Oradea, north-western Romania, dated to the Ha A_1 period.[57] Pins with uncentered and large heads, possibly with a square cross-section, have been recorded at the Dunaújváros necropolis, attributed to the late Koszider culture,[58] and in Valena in eastern Romania.[59] Interestingly, the aforementioned pins are usually perforated below the head, as the example from Velika Humska Čuka. A similar pin, with a large nail-shaped head and a square cross-section of the upper part of the body, and a twisted lower part of the body, was recorded in Bijelo Brdo near Osijek.[60] Therefore, it is possible that the pin from Velika Humska Čuka represents an unfinished product, and that its lower portion was meant to be twisted. The aforementioned pin from Szentendre, with uncentered nail-shaped head and perforation in the upper part of the twisted body, is also similar to our example.[61] However, the closest analogy for our pin can be found in a pin from the Szob hoard in northern Hungary, which possesses a thin nail-shaped head, a square cross-section of the body, a perforation, and a body bent in a wavy manner,

---

[44] Vinski 1958, T. 1, T. II/5–7.

[45] Vinski 1958, T. VII/1.

[46] Гарашанин, Гарашанин 1958, Сл. 15б.

[47] Ikodinović 1985, kat. br. 21.

[48] Лазић 2007, 119.

[49] Schumacher-Matthäus 1985, 101; Лазић 2007, 120.

[50] Judging by the number of ribs and form, it is more probable that the pendants possessed a central thorn rather than a knob.

[51] Kapuran 2019.

[52] Benac, Čović 1956, 27, Taf. 7/5.

[53] Гарашанин 1971; Васић 1997; Васић 2003; Васић 2010; Kapuran 2019.

[54] Kapuran et al. 2020, 39.

[55] Holste 1951; Hänsel 1968, 226.

[56] Lichardus, Vladar 1998, Taf. 27, 29, 33, 41, 42.

[57] Petrescu-Dîmboviţa 1977, 112–113, Pl. 213/4.

[58] Vicze 2011, Pl. 194/4.

[59] Hänsel 1976, Taf. 7/4.

[60] Hänsel 1968, Taf. 14/35.

[61] Hänsel 1968, Taf. 23/11, 13.

the same as the example from Velika Humska Čuka.[62] According to B. Hansel, this pin is dated to phase MD II (Middle Danubian culture), or Br B1, according to Central European chronology.[63]

On the other hand, according to F. Innerhofer, this pin could be determined as "*Lochhalsnadeln mit plattenförmigem Kopf und gekantetem Schaft vom Typ Wetzleinsdorf I*", which is also dated to the phase Br B1.[64]

In his comprehensive work on pins in the territory of the Central Balkans, R. Vasić does not present this type of pin, which possesses a square cross-section of the body and uncentered head. Yet, if such details are disregarded, pins with nail-shaped heads (*Nagelkopfnadeln*), sometimes perforated below the head, and with or without the twisted lower portion of the body, are widespread throughout the Central Balkans, and cover a longer chronological period, from Br B do Ha A, according to Central European chronology.[65] Our example is similar to pins from Susek, with large and thin heads, although those pins possess a twisted upper portion of the body.[66]

The bronze band and *saltaleoni* from Velika Humska Čuka are both culturally and chronologically insensitive and, therefore, their distribution and analogies will not be minutely discussed in the paper.

Concluding Remarks

The hoard from Velika Humska Čuka most likely represents a sort of stash, swiftly formed, without any elements that could indicate a sacral nature of its deposition. The pit is casually formed, shallow and irregular, and the hoard was made of objects that were practically "thrown" without any regularity, save for the possibility that the necklace was deposited in some sort of bag sealed with a pin. The lack of sacral elements that could indicate a votive hoard, such as the regular form of the pit, careful deposition of objects within the pit, filling the pit with cleansed soil, or the presence of other goods in the pit (food, pottery, etc.), is discernible.[67] All of the aforementioned indicates that, in fact, the hoard from Velika Humska Čuka represents a stash. However, it should be highlighted that the remains of the Early Eneolithic house were visible in the time when the hoard was formed, which might have affected the selection of the location of the hoard, thus leaving open the possibility for its votive nature.

The hoard was dug within the southern periphery of the plateau, yet since the position of the Late Bronze Age settlement is unknown, so is the relationship between the hoard and the settlement. Despite a considerable number of Late Bronze Age finds, no archaeological features that might indicate the size and architecture of the settlement were recorded during the excavations. When observing the distribution of Late Bronze Age pottery and bronze finds, which are found all over the site, their highest number has been recorded within the cultural layer in the north-eastern edge of the site.

The hoard contained female jewellery, a necklace made of *saltaleoni* and circular pendants with a central knob, a pin with nail-shaped head, and a folded bronze band that most likely represented raw material for the production of bronze objects. The necklace was comprised of 10 circular pendants, which is the number of pendants most often recorded within graves and hoards of Central Europe,[68] while a Žuto Brdo culture figurine has a representation of an identical necklace on the chest (Pl. III/2).[69]

Chemical composition of the analysed pieces (two pendants, a *saltaleone*, a band, and a pin) is quite uniform, and the composition of the two analysed pendants is almost identical, with a similar percentage of all of the represented elements (except iron). Therefore, it is highly likely that the pendants were made in the same mould, from the same raw materials, and possibly within the same workshop.[70]

From a number of perspectives, the circular pendants are the most sensitive finds from the hoard. Their origins are connected with Saxony, where examples with concentric ribs and a central knob occur from the

[62] Hänsel 1968, Taf. 26/17.

[63] Hänsel 1968, Abb. 2, Abb. 4.

[64] Innerhofer 2000, 38–42, 337–339, Fundliste 3, Karte 4, Taf. 3, 8.

[65] Vasić 2003, 37 etc.

[66] Vasić 2003, Taf. 15/211–212.

[67] Compare: Булатовић 2015.

[68] Schumacher-Matthäus 1985, 101; Compare finds from graves in Soutwestern Germany. https://en.wikipedia.org/wiki/Tumulus_culture#/media/File:Landesmuseum_W%C3%BCrttemberg_-W%C3%BCrtingen-Grabbeigaben560.jpg i https://en.wikipedia.org/wiki/Tumulus_culture#/media/File:Landesmuseum_W% C3%BCrttemberg-Engstingen-Frauengrab554.jpg, accessed on 25th of December 2022.

[69] Letica 1973, T. IX/5.

[70] The objects were sampled for lead and tin isotopes, in order to possibly determine the origin of the copper and tin ores. The analyses will be performed during 2023 within the Flow project, funded by the Science Fund of the Republic of Serbia (Programme IDEAS, Grant no. 7750074).

end of the Early Bronze Age, and prevail up to the Late Bronze Age.[71] By observing the distribution and chronology of such pendants, it can be noted that their utilisation gradually moved towards the south, mostly following the Danube through the Small and Great Hungarian Plain, and further to the east and west throughout the Carpathian Basin. During the Br B_1 period, these pendants are known in the Slovakian Danube region, connected with the early *Hügelgräber* (Tumulus) culture,[72] and in the Great Hungarian Plain, where they are, according to different authors, connected with the Tószeg C phase,[73] the late phase of the Koszider culture,[74] and the appearance of the *Hügelgräber* culture in that territory.[75] According to new absolute dates, the appearance of the *Hügelgräber* culture in Hungary[76] is positioned between the end of the 16th and the 15th century BC, which corresponds to HGK graves in the territory of southern Germany,[77] or the Br B/C period, according to Central European chronology.[78]

The only radiocarbon dated grave of the HGK in southern Pannonia (Vojvodina region) comes from the Velebit necropolis near Senta, and falls within the 14th or the first half of the 13th century cal BC.[79] Besides other finds, this necropolis yielded finds of circular pendants with missing thorns (or knobs).

In the territory of the Balkans, these pendants came from the north, through the Danube corridor (Fig. 4) and, judging by their current distribution, reached the confluence zone of the Sava and Danube. However, based on numerous representations of such pendants on figurines of the Late Bronze Age Žuto Brdo-Girla Mare culture, whose communities inhabited the banks of the Danube from the Great Morava confluence to the Timok confluence; it is only a matter of time before the discovery of such pendants in the given territory. Interestingly, such pendants have not been recorded in the three largest Belegiš I–Cruceni necropolises: Kaluđerske Livade, Karaburma, and Belegiš,[80] even though their appearance in the Balkans is connected with the Belegiš I-Cruceni group and the related cultural group in the Drina region and western Serbia. The related cultural group in western Serbia could be found in literature in several definitions: the western Serbian variant of the Vatin culture,[81] the Brezjak culture,[82] the western Serbian Middle Bronze Age group,[83] etc.

In the Vukovar and Lovas hoards, such pendants have been recorded with the pottery characteristic for the Belegiš I-Cruceni group, and almost identical pottery was utilised in western Serbia. Regarding the territory of western Serbia, a circular pendant with a thorn in the middle was found within a mound burial in Bela Crkva, and two examples were recorded in Gornja Dobrinja and Jabuka, which might indicate that this type of pendant in the territory of the Balkans was particularly popular within the Belegiš I-Cruceni communities, and its related group in western Serbia. According to absolute dates from graves in western Serbia, the group is positioned from the beginning of the 15th to the end of the 13th century cal BC,[84] which matches the dating of the Belegiš I-Cruceni group.[85] Interestingly, the northern part of western Serbia is known for deposits of the tin ore cassiterite, which was procured and abundantly utilised by Late Bronze Age communities in this territory, resulting in the production of a large number of bronze objects, known from mound burials connected with the group.[86] Those mound burials are also connected with the earliest appearance of Baltic amber in the territory of the Central Balkans.[87] This emphasises the idea of a possible tin trade with neighbouring northern communities, both for amber and possibly finished products made of bronze, which might be one of the explanations for the distribution of circular pendants in western Serbia. On the other hand, pendants from Velika Humska Čuka all originate from one mould. Furthermore, they were probably made of the same material (at least the two analysed pendants), enabling the possibility of local production, which will be more precisely determined following the result of tin and led isotope analyses.

---

71 Laux 2016, 135–136; Wels-Weyrauch 1991, 5 etc.
72 Hänsel 1968; Lichardus, Vladar 1998.
73 Bona 1975, 51–56.
74 Vicze 2011.
75 Kiss et al. 2019, 189–190.
76 The term HGK will be used for this culture.
77 Kiss et al. 2019, 189–190.
78 Gerloff 1993, Abb. 10; Harding 2000, 9–17, figs. 1.3. i 1.5.
79 Kapuran 2019a.
80 Петровић 2006; Тодоровић 1977; Вранић 2002.
81 Гарашанин 1973, 359–380.
82 Филиповић 2013, 70.
83 Дмитровић 2016, 233.
84 Bulatović et al. 2018; Gligorić et al 2016; Cwalinski et al. forthcoming.
85 Waterbolk 1988, 117–121; Szentmiklosi 2021, 364, Fig. 1.
86 Huska et al. 2014; Mason et al. 2016; Mason et al. 2020.
87 Cwalinski et al. forthcoming.

By dating the grave from Bela Crkva, which contained a circular pendant, and heart-shaped pendants into the middle and late horizon of HGK, R. Vasić indirectly dates the earliest appearance of such pendants in the Central Balkans to the Br B2/C period.[88] The pendant from Bela Crkva possesses a central thorn and, within the Central European scope, such pendants (with a thorn) are generally younger compared to pendants with a knob.[89] In the Balkans, it seems that pendants with thorns appear simultaneously with pendants with knobs.[90] The grave from Medoševac is the most relevant for dating such pendants in the territory of the Balkans. The grave is dated between 1380 and 1010 cal BC (Br C-Ha A2), while the statistically most probable date falls between the end of the 13th and the end of the 12th century,[91] or the Ha A_1 period, according to the Central European chronology. Such a date is quite young for this type of pendant, as the grave contained other bronze finds that are characteristic of the territory of Central Europe in the earlier phase of HGK.[92] Also, such pendants have not been recorded in any of the numerous hoards within the Serbian Danube region or the Srem region, which are dated into the Ha A_1 period. Therefore, we are prone to shift the utilisation of the Medoševac pendant at least to the slightly earlier Br D period, despite the statistical evaluation of the date. On the other hand, the absolute date originates from the bones of the deceased, and if the statistical evaluation of the date is correct, the pendant could have been in use for a while before it was placed in the grave.

The hoard from Velika Humska Čuka had no chronologically relevant finds besides the jewellery, and the animal bone "from" the pit yielded an Early Eneolithic absolute date, thus originating from the layer in which the hoard was dug.

Above the hoard, a layer with finds predominantly attributed to the Middle Bronze Age was recorded on a zone of compact levelled soil, which was obviously damaged by hoard digging (Fig. 2). Above it, a layer of finds with elements characteristic for the Late Bronze Age in this territory was recorded. The characteristic potsherds from this Late Bronze Age layer are represented by slightly S-profiled bowls with or without wart-like juts on the belly (Pl. IV/1–3, 5), and an example with several short vertical grooves on each side of the jut (Pl. IV/4), along with by cups and beakers with one handle and a modelled extension on the top (Pl. IV/6, 7), amphorae with a slantwise profiled wide rim and ring-shaped inner side (the so-called Brnjica rims) (Pl. IV/8), vessels with wide and deep oblique channels on the belly (Pl. IV/9), vertically perforated tongue-shaped handles with a rectangular cross-section (Pl. IV/11), etc. The closest analogies for such ceramic forms have been recorded at the nearby site of Mediana, in a house dated to the 14th century cal BC, or the Br C period, according to the Central European chronology.[93] The pottery displays certain elements of both the Brnjica and Paraćin groups, which is, likewise, characteristic of this region during the Late Bronze Age.[94] A similar ceramic inventory was recorded within a pit located approximately 2 m southeast of the hoard (Fig. 2), which contained a small S-profiled bowl, a semi-globular cup with a handle and modelled extension on the top, a cup with an arched handle, a pear-shaped amphora with a wide slantwise profiled rim, and a fragment of a vessel with a rectangularly emphasised root of the handle (Pl. IV/12–16). Such stylistic and typological elements are also characteristic of the Brnjica and Paraćin groups from a number of sites within the South Morava Basin.[95] Some of those sites, Gradište in Končulj, Gradina in Svinjište, Medijana in Niš, and Hisar in Leskovac, are absolutely dated between the 15th and the beginning of the 12th century BC, or the Br C and Br D period, according to the Central European chronology.[96]

Interestingly, although these pendants are connected with cultural groups that were in the contact

---

88 Васић 1997, 40.

89 Vinski 1958, 10 i citirana literatura; Hänsel 1968, 162.

90 According to Hänsel (1968), pendants with thorns appear during the MD II (Middle Danubian) period, which would correspond to the Br B1 period, according to the Central European chronology, while pendants with a knob appear during the preceding MD I (Br A2/B1) period.

91 Kapuran et al. 2020, 39.

92 Васић 1997, 38, with cited literature.

93 Булатовић 2008; Bulatović et al. 2018.

94 Булатовић 2008, 236–239; Булатовић, Станковски 2012, 353–355.

95 Булатовић 2007, Т. XLIX, LX/1, LXI/1, LXXIX/1, 3, 7; Булатовић, Станковски 2012, Т. XXVII/13,16, XXVI/26–31, 37, 39, XXVII i dr.

96 Bulatović et al. 2018; Bulatović et al. 2021. Dates from the earliest horizon at the site of Hisar, which position it into the 14th/13th century cal BC are unpublished. Those dates were acquired through the project *Death and Burial between the Aegean and the Balkans* (FWF-P 30475), which was coordinated by S. Gimatzidis from the Austrian Archaeological Institute of the Austrian Academy of Sciences. A paper on the interpretation of the dates is being prepared.

zone with the bearers of the HGK in the southern part of the Carpathian Basin, there are no traces of contact between the indigenous communities and cultural groups from the northwest in the ceramic inventory at Velika Humska Čuka, and those contacts are hardly perceptible on other Late Bronze Age sites in this region.[97] A similar situation can be noted for metal finds, except for the find from Medoševac, which is dominated by finds attributed to the HGK cultural sphere. Therefore, it seems as if those contacts in the territory of the Balkans, meaning the spread of the HGK or its bearers, took place along the Danube region and further to the Srem region and western Serbia, similar to the slightly earlier contacts between the Vinkovci-Somogyvár and Belotić-Bela Crkva groups.[98] According to some authors, the HGK spread in a non-aggressive manner, by a gradual adoption of cultural heritage and the cultural symbiosis between the newcomers and the indigenous population.[99]

In contrast, Velika Humska Čuka displays noticeable indicators of intensified contacts with communities in the northeast, primarily bearers of the Verbicioara group. Pottery attributed to the mentioned group is highly represented within the Late Bronze Age cultural layer at the site. The moment of the onset of those contacts remains unknown, yet judging by a larger usage horizon with a significant amount of pottery in the north-eastern edge of the plateau, dated to the 16th century cal BC,[100] and with no elements of the Verbicioara group, the contacts were most likely established at the beginning of the Late Bronze Age, or the Br C period. Such intensive contacts with the Verbicioara group at the beginning of the Late Bronze Age have also been observed at other sites in this region,[101] as well as contacts with the Žuto Brdo group,[102] while contacts with groups from the Srem region and western Serbia are almost non-existent. All those sites are dated to the beginning of the Late Bronze Age, which gives the impression that the Verbicioara group made a definite contribution to the formation of the Brnjica group.

All of the given data, including the presence of circular pendants with a central knob/thorn, indicate intensive and direct contacts between the communities in the Central Balkans and the surrounding regions during the 15th century cal BC (Br B2/C), especially between communities in western Serbia and Southern Pannonia, and communities of the South Morava Basin and the Timok Valley.[103] These intensive contacts could have been sparked and facilitated by a larger utilisation of horses as a means of transportation, as the presence of the horse in the Central Balkans has been attested since the end of the Early Bronze Age.[104]

The extensive contact would have had a significant impact on the formation of Late Bronze Age groups in the Central Balkans, such as the Paraćin group in the Morava Valley, the Brnjica group in the South Morava Valley and the Kosovo Plain, and the Brezjak group (a regional variant of the Belegiš I group) in western Serbia.

Those groups consolidated during the 14th and the 13th century cal BC, when a new series of changes occurred in the Balkans, especially in the Great and South Morava Valleys.[105] Those changes would bring new cultures and possibly new populations into the region, which could be one of the causes for the profound changes that happened in the Old World after the 13th century BC.

* * *

This remarkable find from Velika Humska Čuka certainly represents a set of female bronze jewellery, most likely stashed at the periphery of the Late Bronze Age settlement during the period of the late 15th and 14th century BC, or Br C period. This was a period of most intensive contacts and cultural interactions during the Bronze Age in the Central Balkans. Although there is a lack of archaeological evidence of direct contacts between the indigenous populations of the South Morava Valley and populations from Pannonia, save for the Medoševac find, the hoard from Velika Humska Čuka represents the result of some sort of indirect contacts with northern populations, which was, additionally, in close and intensive contact with the bearers of the HGK. This primarily refers to the Belegiš

---

97 Булатовић 2008, сл. 4/9; Булатовић, Станковски 2012, Т. XXV/25, Т. XXXI/117, Т. XXXVII/2, 4.

98 Булатовић, Станковски 2012, 331.

99 Tasić 1972, 95; Vicze 2011, 139.

100 The AMS date has not been published yet, although a publication is being prepared.

101 Such pottery has been recorded at Svinjarička Čuka, Mađilka, Donja Toponica, Grаštica, and numerous other sites (Булатовић, Станковски 2012, 73, 131–133, 345–347; Лазић 1996, Т. XI/10–14, Т. XIX/1–3; Т. XXVII/14, XXVIII/3, 6–10; Т. XXX/10–13.)

102 Булатовић, Станковски 2012, Т. XLIV/1–3.

103 Such intensive contacts and possible migrations in the Balkans were previously indicated on the basis of several specific ceramic forms (Bulatović 2011, 133–134).

104 Bulatović, Vander Linden 2017; Bulatović et al. 2019.

105 Bulatović, Filipović 2018; Bulatović et al. 2021.

I-Cruceni group and its local variant in western Serbia, which were, it seems, the direct result of the development of autochthonous Middle Bronze Age groups (Transdanubian Encrusted Pottery culture, Vatin culture) and their partial symbiosis with the HGK.

Those contacts and population movements from the north to the south paved the way for more intensive movements and interactions that consumed the Balkans, especially the Morava and Danube regions, at the end of Br D and the beginning of the Ha A period.

BIBLIOGRAPHY:

Benac, Čović 1956 – A. Benac, B. Čović, *Glasinac* I, Sarajevo 1956.

Богдановић 1996 – И. Богдановић, *Присшуй класификацији бронзаних йредмеша средњеї бронзаної доба у Србији*, необјављена магистарска теза, одбрањена 1996. године на Одељењу за археологију Филозофског факултета у Београду 1996. (I. Bogdanović, *Pristup klasifikaciji bronzanih predmeta srednjeg bronzanog doba u Srbiji*, neobjavljena magistarska teza, odbranjena 1996. godine na Odeljenju za arheologiju Filozofskog fakulteta u Beogradu 1996.)

Bona 1975 – I. Bona, *Die Mittlere Bronzezeit Ungarns und ihre Südöstlichen Beziehungen*, Budapest 1975.

Булатовић, 2007 – А. Булатовић, *Врање: кулшурна сшрашиїрафија йраисшоријских локалишеша у Врањској реїији,* Београд – Врање 2007. (A. Bulatović, *Vranje: kulturna stratigrafija praistorijskih lokaliteta u Vranjskoj regiji*, Beograd – Vranje 2007.)

Булатовић 2008 – А. Булатовић, Стамбени објекат из позног бронзаног доба са локалитета Медијана–сектор југ – прилог проучавању односа параћинске културне групе и брњичке културне групе, *Гласник Срйскоі археолошкоі друшшва* 24, 2008, 223–244 (A. Bulatović, Stambeni objekat iz poznog bronzanog doba sa lokaliteta Medijana–sektor jug – prilog proučavanju odnosa paraćinske kulturne grupe i brnjičke kulturne grupe, *Glasnik Srpskog arheološkog društva* 24, 2008, 223–244.).

Булатовић 2011 – А. Булатовић, Карактеристичне керамичке форме на централном Балкану и у северној Егеји у позно бронзано доба, *Сшаринар* LXI 2011, 121–140. (A. Bulatović, Karakteristične keramičke forme na centralnom Balkanu i u severnoj Egeji u pozno bronzano doba, *Starinar* LXI 2011, 121–140.)

Булатовић, А., 2015 – А. Булатовић, Феномен праисторијских ритуалних јама, неколико примера са централног Балкана, *Сшаринар* н.с. LXV 2015, 7–35. (A. Bulatović, Fenomen praistorijskih ritualnih jama, nekoliko primera sa centralnog Balkana, *Starinar* LXV 2015, 7–35.)

Bulatović et al. 2018 – A. Bulatović, M. Gori, M. Vander Linden, New Absolute Dates As A Contribution To The Study Of The Late Bronze Age Chronology in The Central Balkans, *Glasnik Srpskog arheološkog društva* 34, 121–132.

Bulatović et al. 2019 – A. Bulatović, M. Jovičić, B. Milovanović, Horizont ranog bronzanog doba na lokalitetu Rit, у: *Viminacijum u praistoriji,* A. Kapuran, A. Bulatović, V. Filipović, S. Golubović, (ur.), Beograd, 57–79. (Bulatović et al. 2019 – A. Bulatović, M. Jovičić, B. Milovanović, Early Bronze Age horizon at the site of Rit, in: Viminacium in Prehistory, A. Kapuran, A. Bulatović, V. Filipović, S. Golubović, (ur.), Belgrade, 57–79.)

Bulatović et al. 2020 – A. Bulatović, M. Gori, M. Vander Linden, Radiocarbon Dating the 3rd Millennium BC in the Central Balkans: a re–examination of the Early Bronze Age sequence, *Radiocarbon* vol. 62, no 5, 2020, 1163–1191.

Bulatović et al. 2021 – A. Bulatović, B. Molloy, V. Filipović, The Balkan–Aegean migrations revisited: Changes in material culture and settlement patterns in the Late Bronze Age Central Balkans in light of new data, *Starinar* LXXI 2021, 9–53.

Bulatović, Filipović 2017 – A. Bulatović, V. Filipović, Morava Valley in the Late Bronze Age and the Transitional period – changes in topography and material culture*, In: Fortifications: the Rise and Fall of Defended Sites in the Late Bronze and Early Iron Age of South–East Europe*, B. Heeb, A. Szentmiklosi, R. Krause, M. Wemhoff (eds). (Proceedings of International Conference, Temisoara, Romania from November 11–13th 2015), Berlin 2017, 149–159.

Булатовић, Милановић 2015 – А. Булатовић, Д. Милановић, Велика хумска чука, истраживања 2009. године – прилог проучавању стратиграфије енеолита и бронзаног доба у југоисточној Србији, *Гласник Срйскоі археолошкоі друшшва* 30 2009, 163–188. (A. Bulatović, D. Milanović, Velika humska čuka, istraživanja 2009. godine – prilog proučavanju stratigrafije eneolita i bronzanog doba u jugoistočnoj Srbiji, *Glasnik Srpskog arheološkog društva* 30 2009, 163–188.)

Bulatović, Milanović 2021 – A. Bulatović, D. Milanović, The cultural and chronological context of sites of Bubanj and Velika Humska Čuka near Niš (southeastern Serbia) and their significance for understanding the emergence and development of the Central Balkans eneolithic, Circumpontics 2021/ no. 5, серия История и политические науки 2021, 36–64.

Булатовић, Станковски 2012 – А. Булатовић, Ј. Станковски, Бронзано доба у басену Јужне Мораве и долини Пчиње, Београд–Куманово 2021. (A. Bulatović, J. Stankovski, Bronzano doba u basenu Južne Morave i dolini Pčinje, Beograd–Kumanovo 2021.)

Bulatović, Vander Linden 2017 – A. Bulatović, M. Vander Linden, Absolute Dating of Copper and Early Bronze Age Levels at the Eponymous Archaeological Site Bubanj (Southeastern Serbia), *Radiocarbon* 59 (4) 2017, 1047–1065.

Csányi et al. 1992 – M. Csányi, Sz. Máthe, J. Tárnoki, M. Vicze, A bronzkori tell–kultúrák kutatástörtenéte Magyarországon, in: *Dombokká vált évszázadok*, P. Raczky (Sze.), Budapest–Szolnok 1991–1992, 5–15.

Cwalinski et al. forthcoming – M. Cwaliński, V. Filipović, A. Bulatović, S. Kaur, E. Stout, R. Gligorić, Paulje, mound XI (mound K): new AMS dates and provenience of the earliest amber finds in Serbia, *Prilozi Instituta za arheologiju u Zagrebu*, 39 (2) in press.

Дмитровић 2016 – К. Дмитровић, *Некрополе бронзаног доба у региjи Чачка,* Čačak 2016**.** (Dmitrović 2016 – K. Dmitrović, *Nekropole bronzanog doba u regiji Čačka*, Čačak 2016.)

Fewkes 1934 – V. Fewkes, Archaeological reconnaissance in Yugoslavia: American Expedition, Season 1933. *Bulletin of American School of Prehistoric Reserach* 10, 29–62.

Филиповић 2013 – В. Филиповић, Нова истраживања некропола развиjеног бронзаног доба у северозападноj Србиjи, хронолошка и терминолошка питања. *Гласник Српског археолошког друштва* 29, 2013, 51–84. (V. Filipović, Nova istraživanja nekropola razvijenog bronzanog doba u severozapadnoj Srbiji, hronološka i terminološka pitanja. *Glasnik Srpskog arheološkog društva* 29, 2013, 51–84.)

Гарашанин 1954 – Д. Гарашанин, *Каталог метала I*, Београд 1954. (D. Garašanin, *Katalog metala I*, Beograd 1954.)

Garašanin 1958 – M. Garašanin, Neolithikum und Bronzezeit in Serbien und Makedonien, *Bericht der Romisch–Germanischen Kommission des Deutschen* 39, 1958, 1–130.

Гарашанин 1971 – М. Гарашанин, Праисториjске културе Поморавља и источне Србиjе, у: Д. Деjановић (ур.) *Праисториjске културе Поморавља и источне Србиjе*, Ниш, 1971, 11–17 (M. Garašanin, *Les civilisations préhistoriques de la Morava et de la Serbie Orientale*, Niš, 1971, 11–17.).

Гарашанин 1973 – М. Гарашанин, *Праисториjа на тлу Србиjе*, Београд 1973. (M. Garašanin,, Praistorija na tlu Srbije, Beograd 1973.)

Гарашанин, Гарашанин, 1958 – М. Гарашанин, Д. Гарашанин, Ископавање тумула у Белотићу и Белоj Цркви, *Зборник радова Народног музеjа* I 1958, 17–50. (M. Garašanin, D. Garašanin, Iskopavanje tumula u Belotiću i Beloj Crkvi, *Zbornik radova Narodnog muzeja* I 1958, 17–50.)

Гарашанин, Гарашанин, 1959 – М. Гарашанин, Д. Гарашанин, Нова ископавања на Великоj Хумскоj Чуки код Ниша, *Старинар* IX–X 1959, 243–255. (M. Garašanin, D. Garašanin, Nova iskopavanja na Velikoj Humskoj Čuki kod Niša, Starinar IX–X 1959, 243–255.)

Гарашанин, Тасић (ур.) 1975 – М. Гарашанин, Н. Тасић (ур.), *Праисториjске оставе у Србиjи и Воjводини I*, Београд 1975. (M. Garašanin, N. Tasić (ur.), *Praistorijske ostave u Srbiji i Vojvodini I*, Beograd 1975.)

Гарашанин, Тасић (ур.) 1994 – М. Гарашанин, Н. Тасић (ур.), *Праисториjске оставе у Србиjи и Воjводини II*, САНУ, Одељење историjских наука, Београд 1994.

Gerloff 1993 – S. Gerloff, Zu Fragen mittelmeerländischer Kontakte und absoluter Chronologie der Frühbronzezeit in Mittel– und Westeuropa, *Praehistorische Zeitschrift,* vol. 68, no. 1, 1993, 58–102.

Gligorić et al. 2016 – R. Gligorić, V. Filipović, A. Bulatović, An AMS dated Late Bronze Age grave from the mound necropolis at Paulje, *Starinar* LXVI: 103–110.

Gogaltan 1999 – F. Gogâltan, *Bronzul timpurui şi mijlociu în Banatul Românesc şi pe cursul inferior al Mureşului, Chronologia şi descoperirile de metal*, Timişoara 1999.

Hänsel 1968 – B. Hänsel, *Beiträge zur ur–und frühgeschichtlichen archäologie des mittelmeer–kuturraumes*, Bonn 1968.

Hänsel 1976 – B. Hänsel, *Beiträge zur Regionalen und Chronologischen Gliederung der Älteren Hallstattzeit an der Unteren Donau*, Bonn 1976.

Harding 2000 – A. Harding, *European Societies in the Bronze Age*, Cambridge 2000.

Huska et al. 2014 – A. Huska, W. Powell, S. Mitrović, H. A. Bankoff, A. Bulatović, V. Filipović, R. Boger, Placer Tin Ores from Mt. Cer, West Serbia, and Their Potential Exploitation during the Bronze Age, *Georchaeology*, vol. 29, issue 6, 2014, 477–493.

Икодиновић 1985 – М. Икодиновић, *Сахрањивање под хумкама бронзаног доба у чачанском краjу*, Каталог изложбе, Народни музеj, Чачак, 1985. (M. Ikodinović, *Sahranjivanje pod humkama bronzanog doba u čačanskom kraju*, Katalog izložbe, Čačak 1985.)

Innerhofer 2000 – F. Innerhofer, *Die mittelbronzezeitlichen Nadeln zwischen Vogesen und Karpaten*, Studien zur Chronologie, Typologie und regionalen Gliederung der Hügelgräberkultur, Universitätsforschungen zur prähistorischen Archäologie 71, Teil I-II (Bonn 2000).

Kapuran 2019 – A. Kapuran, The Find from Medoševac 20 Years Later – an Addition to the Studies of the Tumulus Culture on the Territory of the Central Balkans. In: *Papers in Honour of Rastko Vasić 80 th Birthday,* V. Filipović, A. Bulatović, A. Kapuran (eds.), Belgrade 2019, 165–176.

Kapuran 2019a – A. Kapuran*, Velebit, Tumulus culture necropolis in the souther Carpatian Basin (Vojvodina, Serbia),* British Archaeological Reports 2942, Oxford 2019.

Kapuran et al. 2020 – A. Kapuran, M. Gavranović, I. Jovanović, Bronze Age Burials within the Morava, Nišava and Timok Basins, *Starinar* LXXII, 21 – 48.

Kiss et al. 2019 – V. Kiss, M. Csányi, J. Dani, K.P. Fischl, G. Kulcsár, I. Szathmári, Chronology of the Early and

Middle Bronze Age in Hungary. New results, Studia Hercynia XXIII/2, 2019, 173–197.

Kytlicová 2007 – O. Kytlicová *Jungbronzezeitliche Hortfunde in Böhmen*, Prähistorische Bronzefunde Ab. XX, Band 12, Stuttgart 2007.

Лазић 1996 – М. Лазић, *Култура Доња Брњица – генеза, развој и хронологија*, необјављена докторска дисертација одбрањена на Одељењу за археологију, Филозофског факултета у Београду, 1996. (M. Lazić, *Kultura Donja Brnjica – geneza, razvoj i hronologija,* neobjavljena doktorska disertacija odbranjena na Odeljenju za arheologiju, Filozofskog fakulteta u Beogradu, 1996.)

Лазић 2007 – М. Лазић, Хумка из бронзаног доба на локалитету Савин лакат код Пријепоља, Археика 1, 109–132. (M. Lazić, Humka iz bronzanog doba na lokalitetu Savin lakat kod Prijepolja, Arhaika 1, 109–132.)

Laux 2016 – F. Laux*, Der Hals– und Brustschmuck in Niedersachsen*, Prähistorische Bronzefunde Ab.VI, Band 15, Stuttgart 2016.

Letica 1973 – Z. Letica, *Antropomorfne figurine bronzanog doba u Jugoslaviji*, Beograd 1973.

Lichardus, Vladar 1998 – J. Lichardus, J. Vladar, Frühe und Mittlere Bronzezeit in der Südwestslowakei Forschungsbeitrag von Anton Točík (Rückblick und Ausblick), Slovenska Archeologia XLV–2, 1998, 221–352.

Mason et al. 2016 – A. H. Mason, W.G. Powell, H. A. Bankoff, R. Mathur, A. Bulatović, V. Filipović, J. Ruiz, Tin isotope characterization of bronze artifacts of the central Balkans, *Journal of Archaeological Science* 69, 2016, 110–117.

Mason et al. 2020 – A. Mason, W. Powell, A.H. Bankoff, R. Mathur, M. Price, A. Bulatović, V. Filipović, Provenance of tin in the Late Bronze Age Balkans based on probabilistic and spatial analysis of Sn isotopes, *Journal of Archaeological Science* 122, 2020, 1051–1081.

Mozsolich 1967 – A. Mozsolich, *Bronzefunde des Karpatenbeckens*, Budapest 1967.

Novotna 1980 – M. Novotna, *Die Nadeln in der Slowakei*, Prähistoriche Bronzefunde, Abt. XIII, 6. Band, Munchen 1980.

Пековић 2013 – М. Пековић, *Инкрустована керамика бронзаног доба у српском Подунављу*, Београд 2013. (M. Peković, Inkrustovana keramika bronzanog doba u srpskom Podunavlju, Beograd 2013.)

Petrescu–Dîmboviţa 1977 – M. Petrescu–Dîmboviţa, *Depozitele de bronzuri din România*, Bucureşti, 1977.

Петровић 2006 – Б. Петровић*, Калуђерске ливаде, некропола бронзаног доба*, Београд 2006. (B. Petrović, Kaluđerske livade, nekropola bronzanog doba, Beograd 2006.)

Петровић 2005 – Ж. Петровић, *Народни музеј у Нишу, 1933–2003*, Ниш 2005. (Ž. Petrović, Narodni muzej u Nišu, 1933–2003, Niš 2005.)

Поповић 1975 – Д. Поповић, Бронзана остава из Шимановаца, у: *Праисторијске оставе у Србији и Војводини I*, М. Гарашанин, Н. Тасић (ур.), Београд 1975, 43–51. (D. Popović, Bronzana ostava iz Šimanovaca, u: Praistorijske ostave u Srbiji i Vojvodini I, M. Garašanin, N. Tasić (ur.), Beograd 1975, 43–51.)

Popović 1994 – D. Popović, Ostava iz Dobrinaca, y: M. Garašanin, N. Tasić (ur.) *Praistorijske ostave u Srbiji i Vojvodini II*, Београд 1994, 8–24.

Popović 1996 – D. Popović, Älteste und jüngste Elemente der Hortfunde aus der späten Bronzezeit in Srem, in: *The Yugoslav Danube basin and the Neighbouring Regions in the 2nd millennium b.c*., N. Tasić (Ed.), Belgrade–Vršac 1996, 265–278.

Seidel 1995 – U. Siedel, *Bronzezeit.* Stuttgart 1995.

Schumacher–Matthäus 1985 – G. Schumacher–Matthäus, *Studien zu Bronzezeitlichen Schmucktrachten im Karpatenbecken. Ein Beitrag zur Deutung der Hortfunde im Karpatenbecken*, Mainz 1985.

Szentmiklosi 2021 – A. Szentmiklosi, *Aşezările culturii Cruceni–Belegiš în Banat*, Cluj–Napoca 2021.

Тасић 1965 – Н. Тасић, *Позно енеолитски, бронзанодобни и слој старијег гвозденог доба на Гомолави*, Рад војвођанских музеја 14, 177–228. (N. Tasić, Pozno eneolitski, bronzanodobni i sloj starijeg gvozdenog doba na Gomolavi, Rad vojvođanskih muzeja 14, 177–228.)

Tasić 1972 – N. Tasić, Die Panonische tiefebene und der Zentralbalkan an übergang von der Mittleren in die späte Bronzezeit, *Balcanica* III 1972, 93–115.

Todorović 1977 – J. Todorović, *Praistorijska Karaburma II, nekropola bronzanog doba*, Beograd 1977.

Васић 1997 – Р. Васић, Белешке о бронзаном добу у Србији, *Зборник радова Народног музеја (Ниш)* XXVII 1997, 37–49. (R. Vasić, Beleške o bronzanom dobu u Srbiji, Zbornik radova Narodnog muzeja (Niš) XXVII 1997, 37–49.)

Vasić 2003 – R. Vasić, *Die Nadeln im Zentralbalkan (Vojvodina, Serbien, Kosovo und Makedonien)*, Prähistoriche Bronzefunde Abt. XIII, Band 11, Stuttgart 2003.

Vasić 2010 – R. Vasić, *Die Halsringe im Zentralbalkan (Vojvodina, Serbien, Kosovo und Mazedonien)*, Prähistoriche Bronzefunde Abt. XI, Band 7, Stuttgart 2010.

Васић, Ерцеговић-Павловић, Минић 1984 – Р. Васић, С. Ерцеговић-Павловић, Д. Минић, Велесница, извештај о сондажним рекогносцирањима у 1980. години, *Ђердапске свеске* II 1984, 125–132. (R. Vasić, S. Ercegović-Pavlović, D. Minić, Velesnica, Prospection par sondage de 1980, *Đerdapske sveske* II 1984, 125–132).

Vicze 2011 – M. Vicze, *Bronze Age Cemetery at Dunaújváros–Duna–dűlő, Eötvös Loránd*, Budapest 2011.

Vinski 1958 – Z. Vinski, Brončane ostave Lovas i Vukovar, *Vjesnik arheološkog muzeja u Zagrebu*, Zagreb, 1–44.

Vinski Gasparini 1973 – K. Vinski Gasparini, Kultura polja sa žarama u sjevernoj Hrvatskoj, Zadar 1973.

Вранић 2002 – С. Вранић, *Белегиш*, *Стојића гумно – некропола спаљених покојника*, Београд 2002. (S. Vranić, Belegiš, Stojića gumno – nekropola spaljenih pokojnika, Beograd 2002.)

Вукмановић, Радојчић 1995 – М. Вукмановић, Н. Радојчић, *Каталог метала* II, Beograd 1995. (M. Vukmanović, N. Radojčić, Katalog metala II, Beograd 1995.)

Waterbolk 1988 – H. T. Waterbolk, C^{14}–Datierungen von Gomolava, in: *Gomolava I, Chronologie und Stratigraphie der Vorgeschichtlichen und antiken kulturen der Donauniederung und Sudosteuropas,* (eds.) N. Tasić, J. Petrović, Novi Sad 1988, 117–122.

Wels-Weyrauch 1991 – U. Wels-Weyrauch, *Die Anhänger in Südbayern*. Prähistoriche Bronzefunde Abt. XI, Band 5. Stuttgart.

Резиме: АЛЕКСАНДАР БУЛАТОВИЋ, Археолошки институт, Београд
АЛЕКСАНДАР КАПУРАН, Археолошки институт, Београд
ОГЊЕН МЛАДЕНОВИЋ, Археолошки институт, Београд
ПЕТАР МИЛОЈЕВИЋ, Археолошки институт, Београд

СЕТ БРОНЗАНОГ НАКИТА СА ЛОКАЛИТЕТА ВЕЛИКА ХУМСКА ЧУКА КОД НИША, ЈУГОИСТОЧНА СРБИЈА

Прилог проучавању интеракција бронзанодопских заједница централне Европе и централног Балкана

Кључне речи. – југоисточна Европа. централна Европа, Балкан, Велика хумска чука, позно бронзано доба, култура гробних хумки, бронзани накит, културна трансмисија

Приликом археолошких истраживања на локалитету Велика хумска чука код Ниша у 2022. години откривен је сет бронзаног накита, укопан у остатке раноенеолитске куће. Сет се састојао од 22 бронзана предмета: 10 примерака спирално увијене траке (*saltaleoni*), 10 кружних привезака са по три концентрична ребра и испупчењем у средини (*Stachelscheibenanhänger*), игле са ексерастом главом и комадом више пута савијене бронзане траке. Овај налаз донекле је јединствен, не само према свом саставу већ и по чињеници да представља један од ретких налаза остава/скривница бронзаних предмета који је откривен приликом систематских археолошких истраживања.

На основу броја и међусобног положаја кружних привезака и салтелеона, ови налази највероватније представљају делове композитне огрлице, односно плаштног накита, какав нам је познат са представа на жутобрдским фигуринама у српском Подунављу. Готово идентични сетови накита, са комбинацијом огрлице и игле, познати су из сахрана женских особа под тумулима са територије централне Европе у бронзано доба.

У погледу стилске и типолошке анализе, свакако су најиндикативнији кружни привесци са испупчењем у средини (*Stachelscheibenanhänger*). Овакав облик привезака, односно различити типови и варијанте ових предмета јављају се током свих фаза бронзаног доба на широј територији од Саксоније, преко Бохемије, Карпатске котлине и Трансилваније, док је мањи број примерака познат и са територије централног Балкана. На овој пространог територији, дистрибуција таквих привезака доводи се у блиску везу са носиоцима културе гробних хумки (*Hügelgräberkultur*), односно њеним локалним варијантама, и готово увек се јавља у комбинацији са салтелеонима, у оквиру сетова накита у оставама или гробовима. На територији Србије, њихова дистрибуција прати се на простору Срема, Баната и Подунавља, али и западне Србије (Подриње), односно у оквиру локалних група које стоје у вези са културом гробних хумки на овом простору (Белегиш–Кручени I, брезјачка). На територији Јужног Поморавља, одакле потиче наша остава, најближу аналогију налазимо у гробу из Медошевца, који је апсолутно датован у период између 14. и 11. века пре наше ере.

Иако некарактеристична, игли из оставе са Велике хумске чуке аналогије налазимо у карпатским примерцима (Словачка, Мађарска, Румунија), где су често повезиване са налазима културе гробних хумки. На територији централног Балкана, најближе аналогије јој налазимо у иглама са ексерастом главом (*Nagelkopfnadeln*), које су продуженог хронолошког трајања, те у том смислу не претерано осетљиве.

Резултати хемијских анализа састава једног дела оставе указују на велику уједначеност свих присутних елемената, док се за два анализирана кружна привеска може претпоставити да су израђени у истом калупу и од исте сировине.

Остава/скривница са Велике хумске чуке представља сет женског накита која је похрањена крајем 15. или током 14. века пре наше ере (Br C). Управо у том периоду одигравају се најинтензивнији контакти популација бронзаног доба на територији централног Балкана, о чему сведоче и стилско-типолошке карактеристике налаза из оставе, односно њихова веза са централном Европом, Карпатском котлином, и културом гробних хумки. Остава са Велике хумске чуке највероватније представља резултат ових све интензивнијих контаката, који су имали значајног удела у формирању културних група позног бронзаног доба на територији централног Балкана (брњичка, параћинска, брезјачка).

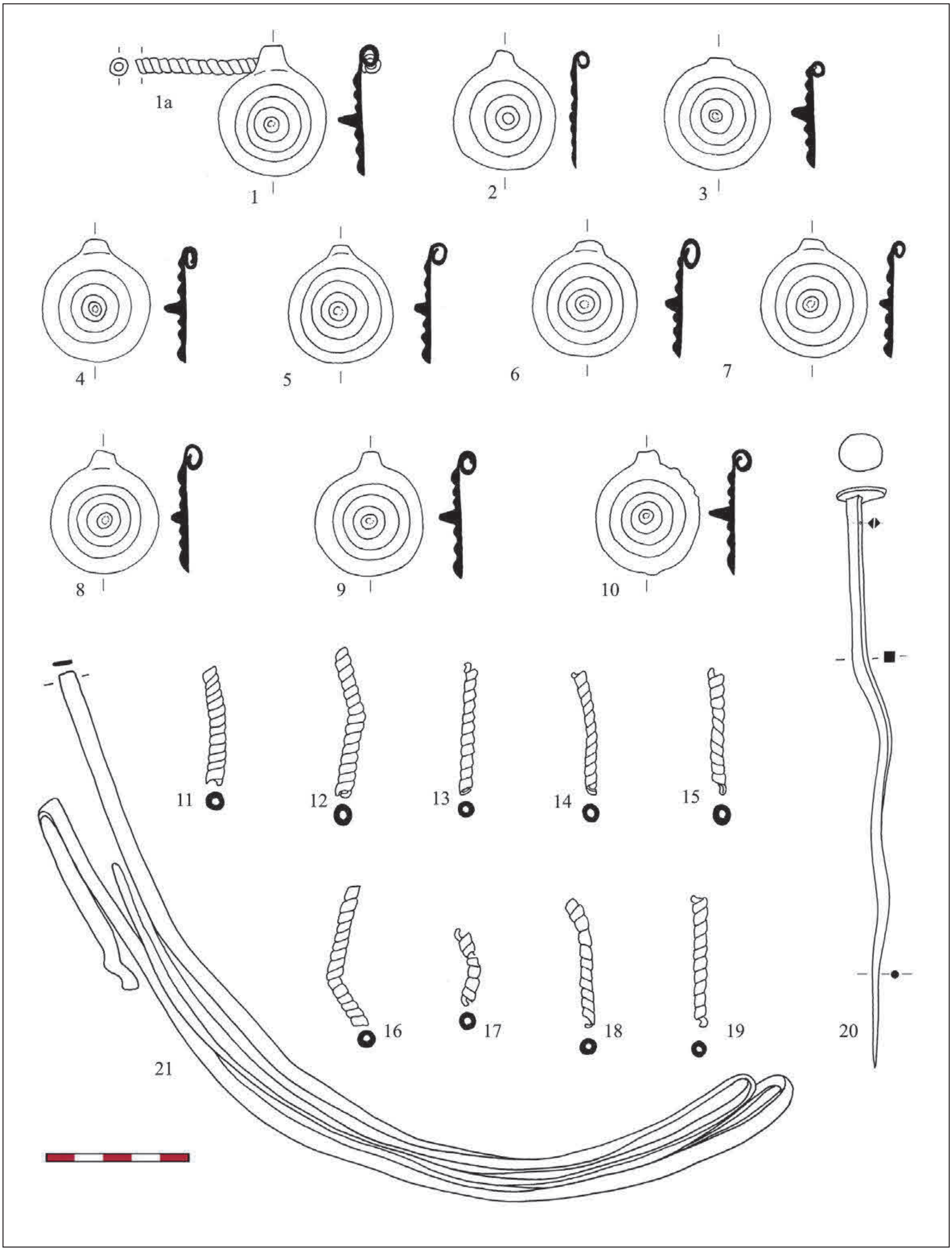


***Plate I** – Set of bronze jewellery from Velika Humska Čuka (by A. Kapuran)*

***Табла I** – Сет бронзаног накита са Велике хумске чуке (цртеж А. Капуран)*

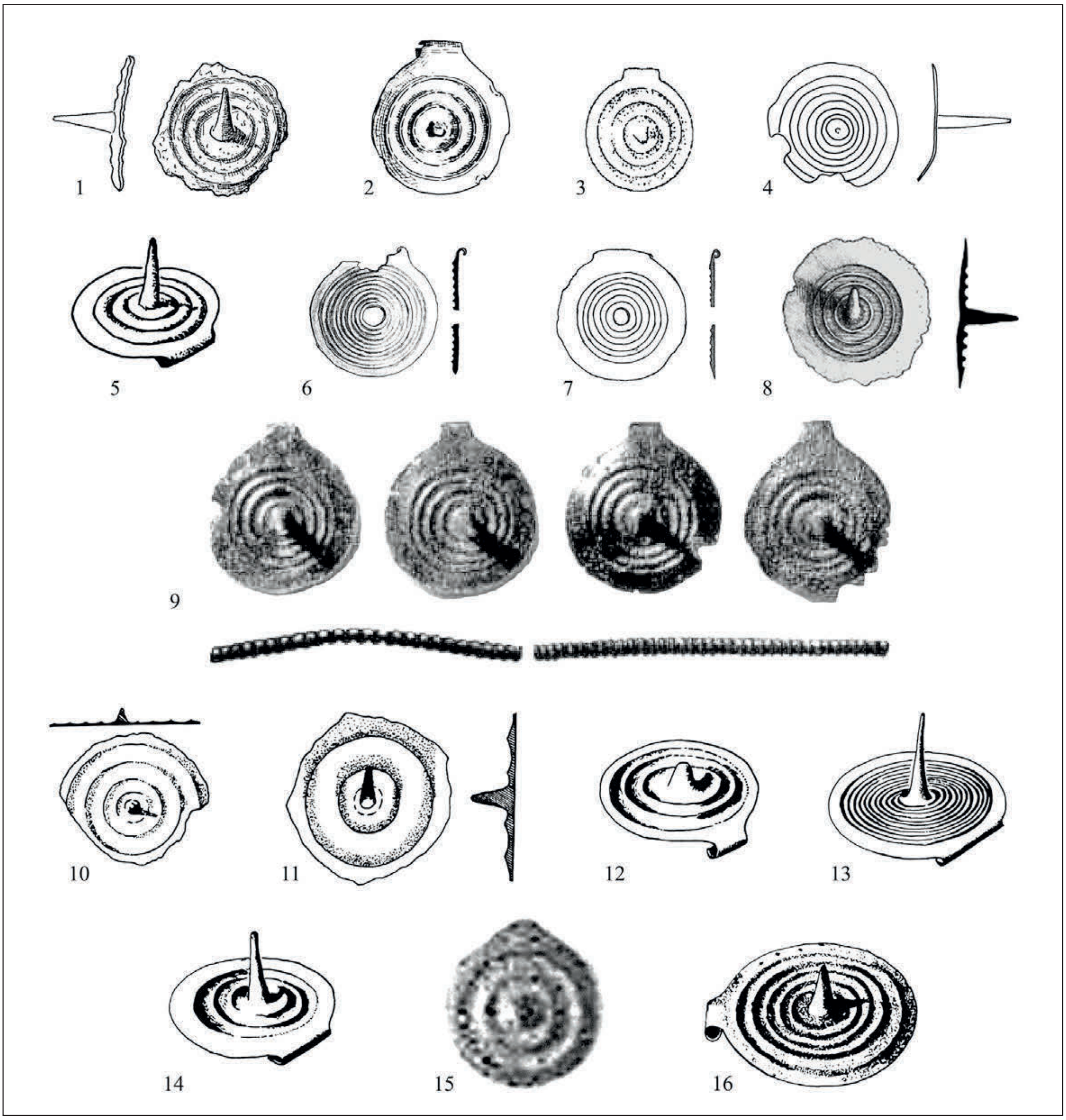


Plate II *– Circular pendants with central thorn/knob in the Balkans*
Sites: 1. Bela Crkva, Humka 3 grave 1 (Гарашанин, М, Гарашанин Д. 1958); 2, Vinča (D. Гарашанин 1954); 3. Vatin (Milleker 1905); 4. Medoševac, grave (Kapuran 2019); 5. Gomolava (Tasić 1965); 6-7. Velebit, graves 8 and 11 (Kapuran 2019a); 8. Šiljkovica (Икодиновић 1985); 9. Jabuka, central part of the tumulus (Лазић 2007); 10. Veliko Nabrđe (Vinski Gasparini 1973); 11. Dobrinci (Popović 1996); 12-14. Lovas, hoard (Vinski 1958); 15. Vukovar, hoard (Vinski 1958); 16. Glasinac, Han Osovo, tumulus 1, grave 2 (Benac, Čović 1956).

Табла II *– Кружни привесци са централним трном/испупчењем на Балкану*
Налазишта: 1. Бела Црква, Хумка 3 граве 1 (Гарашанин, М., Гарашанин Д. 1958); 2, Винча (Гарашани, Д., 1954); 3. Ватин (Milleker 1905); 4. Медошевац, граве (Kapuran 2019); 5. Гомолава (Tasić 1965); 6–7. Велебит, гробови 8 и 11 (Kapuran 2019a); 8. Шиљковица (Икодиновић 1985); 9. Јабука, централни део тумула (Лазић 2007); 10. Велико Набрђе (Vinski Gasparini 1973); 11. Добринци (Popović 1996); 12–14. Ловас, остава (Vinski 1958); 15. Вуковар, остава (Vinski 1958); 16. Гласинац, Хан Осово, тумул 1, гроб 2 (Benac, Čović 1956)

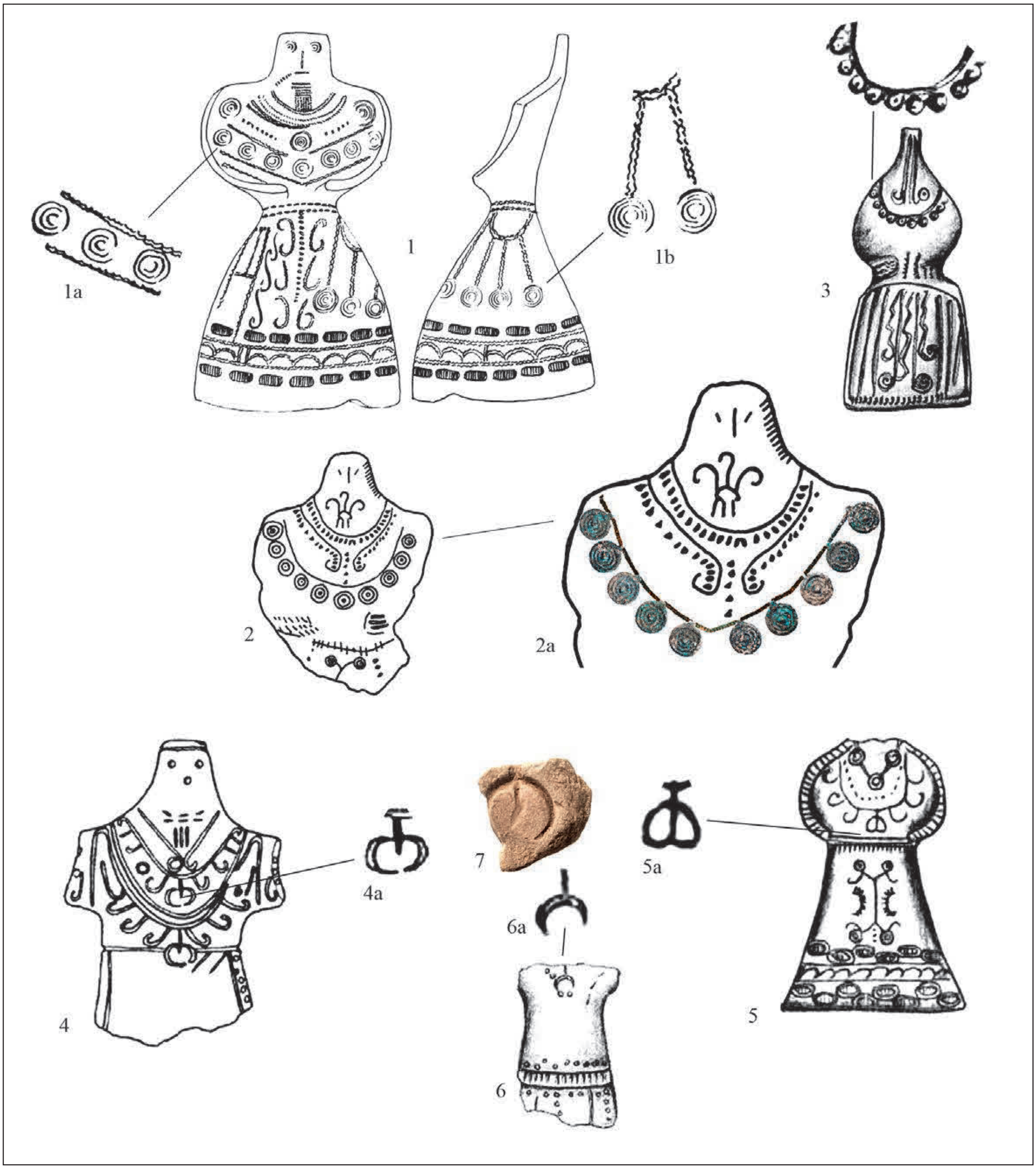


Plate III *– LBA figurines with ornaments in form of circular or lunular pendants from sites in the Balkans*
Sites: 1. Klenovnik; 2. Golubac, 2a. Same figurine with the possible reconstruction of the necklace from Velika Humska Čuka hoard; 3. Krna; 4. Gardinovci; 5. Minine vode; 6. Klisa–Ekonomija; 7. Žuto brdo, Radoševac
(1, 2, 4 – Letica 1973; 3, 5, 6 – Пековић 2013)

Табла III *– Фигурине позног бронзаног доба са орнаментима у виду кружних и лунуластих привезака са налазишта на Балкану*
Налазишта: 1. Кленовник; 2. Голубац, 2а. Иста фигурина са идеалном реконструкцијом огрлице из оставе са Велике хумске чуке; 3. Крна; 4. Гардиновци; 5. Минине воде; 6. Клиса–Економија; 7. Жуто брдо, Радошевац
(1, 2, 4 – Letica 1973; 3, 5, 6 – Пековић 2013)

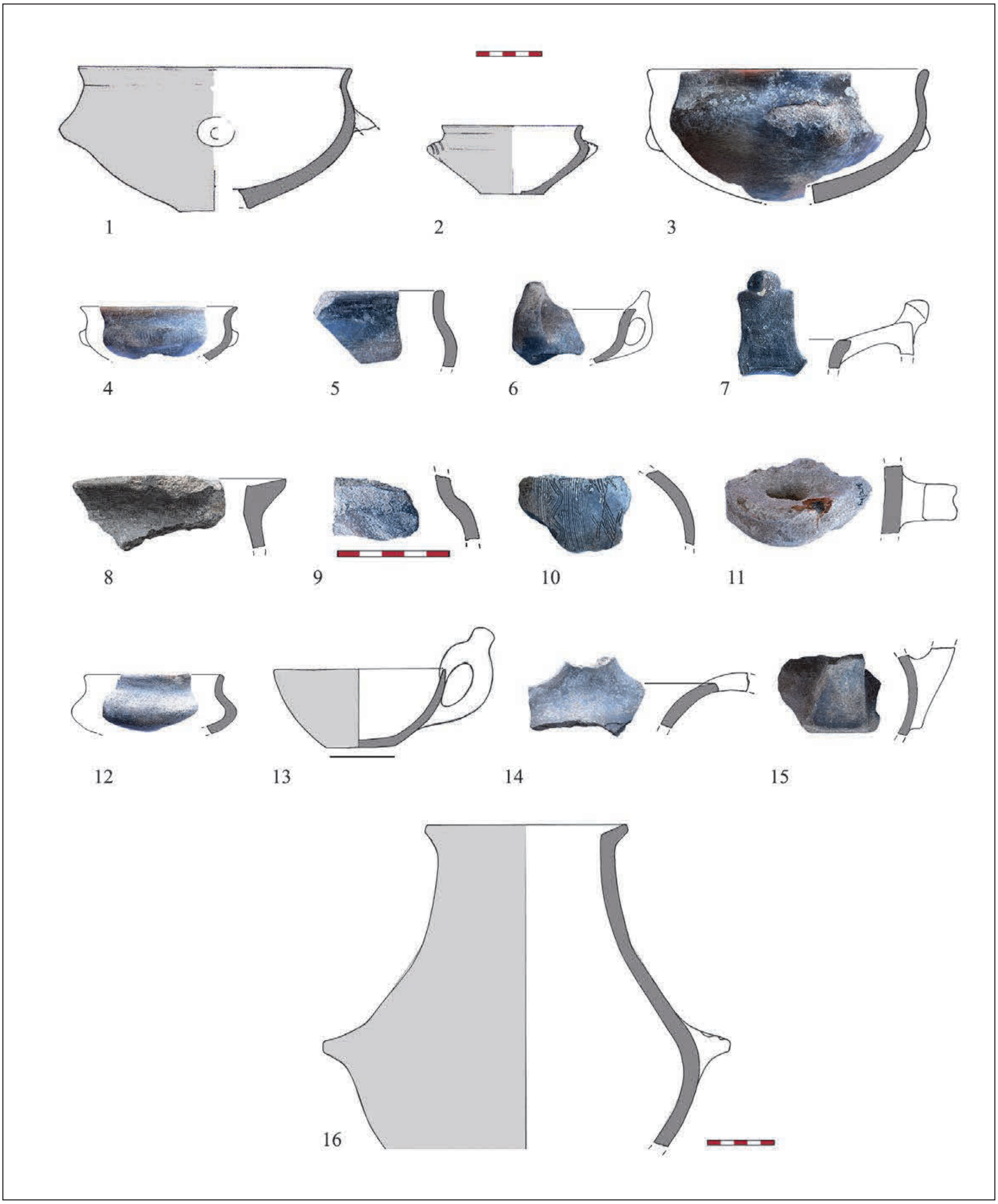


Plate IV *– 1–11. Pottery from the layer in which the hoard was dug;*
12–16. Pottery from the Late Bronze Age pit in the vicinity of the hoard
(by A. Bulatović and A. Kapuran)

Табла IV *– 1–11. Керамика из културног слоја из којег је остава укопана;*
12–16. Керамика из јаме позног бронзаног доба у близини оставе
(илустрације А. Булатовић и А. Капуран)

UDC: 903.2"638.7"(497.5-11)
903(=15)"938.7"(497)
https://doi.org/10.2298/STA2373053D
Original research article

MARKO DIZDAR, Institute of Archaeology, Zagreb

LATE LA TÈNE HORSE EQUIPMENT OF THE SCORDISCI – TREFOIL-SHAPED TERRET RINGS FROM EASTERN CROATIA

e-mail: marko.dizdar@iarh.hr

Abstract. – The various Late La Tène items of horse equipment found at the sites of the Scordisci include trefoil-shaped terret rings made of copper alloy. Two shape types have been identified; the much more numerous type has a rounded, protruding and decorated plate. These terret rings have parallels in the south-eastern Alpine region and at sites in Central Europe; their abundance at the sites of the Scordisci probably indicates that they were made in local workshops. Just like other Late La Tène items of horse equipment, these terrets can be associated with mounted warriors, who had the most prominent position in communities.

Key words. – Horse equipment, Late La Tène Period, Croatia, terret rings, Scordisci, mounted warriors, oppida

The various Late La Tène items of horse equipment from sites in the south-eastern Carpathian Basin are much more numerous than those from the previous phases of development. Most often, these are chance finds with no find contexts; it is rare for finds of horse equipment to come from the excavations of Late La Tène cemeteries or settlements of the Scordisci.[1] The Late La Tène items of horse equipment of the Scordisci are not only numerous, but also varied; the same thing has been noticed in Central Europe. The area of the Padea Pangjuruski Kolonii group includes numerous Late La Tène warrior graves, but the only horse equipment finds are: most often iron bits, rectangular iron buckles, and iron spurs.[2]

Previous investigations of the Scordiscan cemeteries have shown that horse equipment rarely appears in warrior graves. These are richly equipped graves with weapons and other items, which shows that owning a horse indicated a prominent social position in the community. The sites of the Scordisci include various forms of Late La Tène iron bits,[3] followed by iron spurs[4]. However, the most numerous finds are different items of horse equipment made of copper alloy. The most numerous objects in this group are differently shaped and decorated horse harness buttons, followed by trefoil-shaped terret rings, which come in two basic forms – with or without a central protruding rounded plate.

Trefoil-shaped terret rings with a rounded plate

This recognisable Late La Tène piece of horse equipment has been the subject of several papers, but the work of Dragan Božič is the basis for its study.[5] D. Božič points out that most trefoil-shaped terret rings with a

[1] For the Late La Tène typology of the Scordiscan material legacy, see: Božič 1981; Guštin 1984.

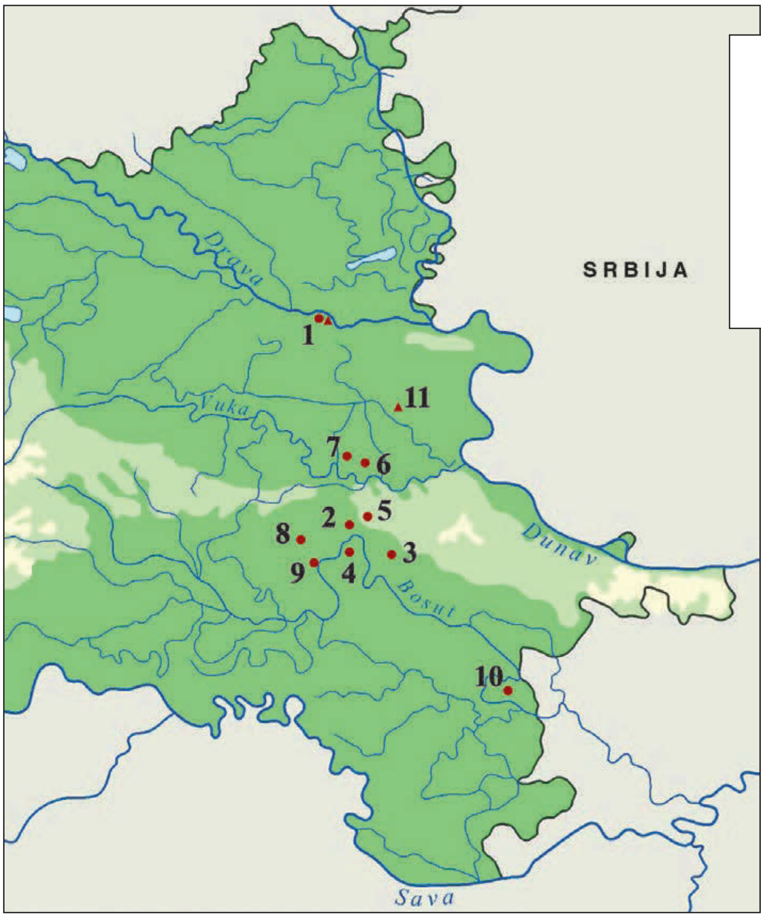
[2] For example, Rustoiu 2005; 2008; Łuczkiewicz, Schönfelder 2011 etc.

[3] For example, Božič 1984; Werner 1984; 1985; 1988; Balen-Letunić 1986; Stojić 2003; Łuczkiewicz, Schönfelder 2011; Božič 2018; Dizdar, Filipović 2020; Guštin, Stanković Pešterac 2020 etc.

[4] Božič 1984; Филиповић 2009.

[5] Božič 1993; 2001.

Manuscript received 20th June 2023, accepted 5th August 2023



● – with a rounded plate
▲ – without a rounded plate

1 Osijek; 2 Vinkovci; 3 Mirkovci;
4 Rokovci; 5 Nuštar; 6 Pačetin;
7 Tordinci; 8 Retkovci; 9 Cerna;
10 Podgrađe; 11 Bobota

Fig. 1. Distribution of trefoil-shaped terret rings from eastern Slavonia and western Syrmia (made by: M. Dizdar)

rounded plate have been found in the south-eastern Alpine region and in Central European oppida.[6] These terrets have been also analysed by M. Čižmař,[7] then by M. Schönfelder,[8] and recently by Z. Mírová, who singles them out as the Staré Hradisko type, which she divides into two variants. One variant consists of terrets with a rounded plate; the other, of those with small protrusions in the middle between the three loops.[9]

The trefoil-shaped terret rings with a rounded plate are dated to the Late La Tène based on the motifs on the central plate and the finds from the oppida in Central Europe,[10] i.e., they are dated to LT C2–D1.[11] Initially, their function was unclear because of the lack of find contexts,[12] but Ch. Schlott and A. Dular were recorded as suggesting that the objects were terrets. At that time, the only find with a known context was a trefoil terret from the Late La Tène female grave of Padarič 3, in the Strmec cemetery near Bela Cerkev,[13] where it was in secondary use on a necklace with other bronze objects and amber and glass beads.[14]

For identifying the trefoil-shaped terret rings with a rounded plate as Late La Tène items of horse equipment, great importance is given to the finds from the Scordiscan area,[15] such as the group find from Veliki Vetren in south-western Serbia consisting of weapons and horse equipment.[16] Their identification as Late La Tène items of horse equipment was confirmed when the probable remains of a Scordisci sanctuary were found in the Lower Town of Osijek, with numerous items of weapons and horse equipment, dated to LT D1.[17] Standing out among the items of horse equipment,

[6] Božič 1993, 145, Fig. 2, List 2; 2001, 185, Fig. 8.
[7] Čižmař 2002, 216, Fig. 20; Čižmař et al. 2010, 134, Fig. 8.
[8] Schönfelder 2002, 268–269, Fig. 169; 204, Tab. 46.
[9] Mírová 2019, 133–134, 157, Fig. 65; 2020, 361, 365, Fig. 6.
[10] Božič 1993, 145, Fig. 6; 1999, 198.
[11] Mírová 2019, 157; 2020, 365.
[12] Božič 1993, 141; Schönfelder 2002, 268–269.
[13] Dular 1991, 57, 88, Pl. 51/26.
[14] Božič 1993, 141, Fig. 3/5; 2001, 185.
[15] Božič 2001, 185.
[16] Stojić 2003.
[17] Dizdar, Filipović 2020.

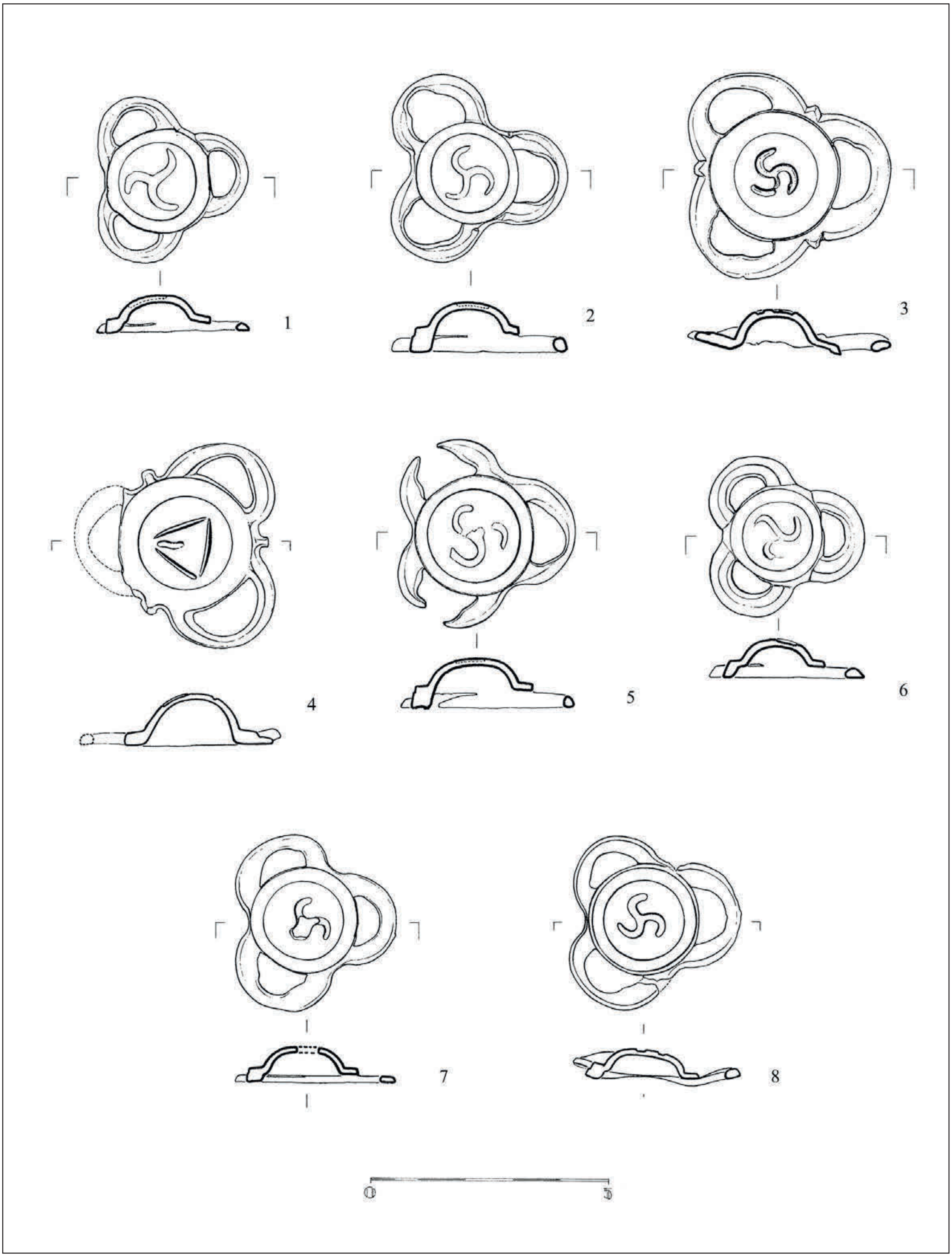


Fig. 2. Trefoil-shaped terret rings with a rounded plate, from the Osijek – Barracks site (drawn by: M. Rončević)

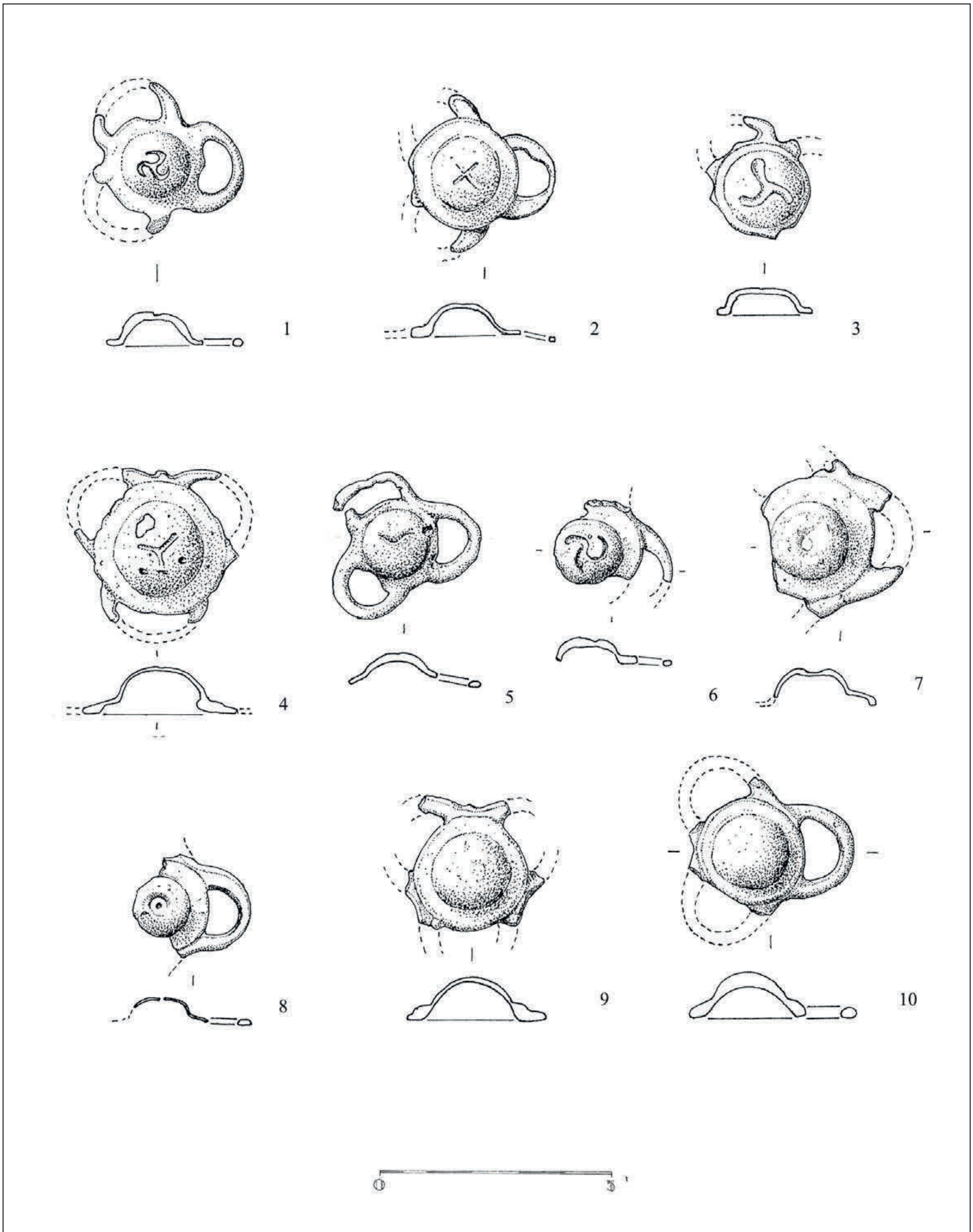


Fig. 3. Trefoil-shaped terret rings with a rounded plate, from the Vinkovci region:
1–2 Vinkovci – Blato; 3 Mirkovci – Malat; 4 Rokovci – Đubraci; 5 Nuštar – Žankovac; 6 Pačetin – Pazarište;
7 Tordinci – Močila; 8 Retkovci – Tomašinci; 9 Cerna – Benić Livade; 10 Podgrađe – Livade
(drawn by: M. Marjanović Lešić)

SU	SF No. / AMO Inv. No.	Var.	Motif	Dim.	Th.	Diam. RP.	Enamel
189	108 / 230928	A	triskele	3.5 x 3.3	0.6	2.2	
336	415 / 230954	A	triskele	4.0 x 3.9	1.0	2.2	
336	437 / 230955	A	triskele	4.5 x 4.0	0.8	2.6	
336	468 / 230956	B	triangle	4.3 x 3.2 damaged	1.1	2.8	
676	520 / 230957	A	triskele	3.9 x 3.9	0.9	2.5	
676	538 / 230959	A	triskele	3.4 x 3.4	0.7	2.1	
594	606 / 230960	A	triskele	3.6 x 3.5	0.7	2.3	
594	613 / 230961	A	triskele	3.8 x 3.6	0.6	2.3	red

SU = stratigraphic unit; SF No. = special find number; Var. = variant; Dim. = dimension in centimetres;
Th. = thickness in centimetres; Diam. RP. = diameter of the rounded plate in centimetres.

Tab. 1 Trefoil-shaped terret rings with a rounded plate from the Osijek – Barracks site (made by: M. Dizdar)[24]

aside from iron bits and various bronze buttons, were trefoil-shaped terret rings with a decorated rounded plate – a total of eight terrets of this shape (Fig. 2).[18] This was not an isolated find in the western distribution area of the Scordisci, as a large number of these terrets has been found at sites in the vicinity of Vinkovci[19] (Fig. 1) during rescue excavations and field surveys conducted over the last twenty years (Fig. 3).[20]

The trefoil-shaped terret rings of this type, as pointed out by D. Božič, are characterised by a rounded protruding central plate, which can be decorated with different motifs, the most frequent being the triskele motif. The motif was filled with enamel, usually red. On the sides, there are three semi-circular loops or three perforated leaves spreading from the middle; the loops are sometimes next to one another, and sometimes there is a small gap between them. In rare cases, there are small protrusions between the loops, as on two terrets from Osijek (Fig. 2: 3–4; SF 437 and 468) and one from the Rokovci – Đubraci site (Fig. 3: 4). On the terret from the site of Stari Grad near Podbočje, each loop has a small protrusion at both ends.[21]

D. Božič distinguishes two variants based on shape.[22] Variant A is characterised by the rounded plate standing or lying in the place where the loops or leaves meet. Variant B has the rounded plate on the same plane as the loops. This division is also used in the analysis of the finds from Osijek and the Vinkovci region, and from other sites of the Scordisci.

In the remains of the Scordiscan sanctuary in Osijek, eight terrets with a rounded plate were found (Fig. 2; Tab. 1); all except one seem to belong to variant A.[23] The rounded plate is decorated with a triskele motif, one of them still showing traces of red enamel. The single variant B terret is decorated with a triangle motif (Fig. 2: 4). The largest number of terrets were found in two layers, which are assumed to be the remains of a sanctuary (SU 336 and 676), together with weapons, other horse tack items, and animal bones. Other finds come from Roman structures with foundations that damaged the sanctuary. Their size is between 3.3 and 4.5 cm, and their thickness with the plate is between 0.6 and 1.1 cm. The diameter of the plate is between 2.1 and 2.8 cm (Tab. 1).

Trefoil-shaped terret rings with a rounded plate have been found at nine sites in and around Vinkovci (Fig. 3; Tab. 2). Only the prominent Late La Tène settlement of Vinkovci – Blato had two terrets, belonging to variants A and B.[25] Each of the other sites had a single terret. Terrets are usually only partly preserved,

---

[18] Dizdar, Filipović 2020, 94.

[19] Dizdar 2001, 114; 2016, 40.

[20] I would like to thank Slavica Filipović, my colleague from the Archaeological Museum Osijek, for the finds from the Late La Tène sanctuary in Osijek, and Hrvoje Vulić and Boris Kratofil, my colleagues from the Municipal Museum in Vinkovci, for the finds of the Late La Tène horse equipment from sites in the Vinkovci region.

[21] Božič 1993, 137, Fig. 1/2.

[22] Božič 1993, 140–141.

[23] Dizdar, Filipović 2020, 92, Fig. 10/ 6.

[24] The order of terret rings in Tables corresponds to those in Figures.

[25] Dizdar 2001, 114, Pl. 5/11; 2016, 40, Fig. 13/4.

Site	Var.	Motif	Dim.	Th.	Diam. RP.	Enamel
Vinkovci – Blato	B	triskele	not complete	0.7	2.3	red
Vinkovci – Blato	A	cross	not complete	0.7	2.3	
Mirkovci – Malat	A	triskele	not complete	0.7	2.1	white
Rokovci – Đubraci	A	three-pointed star with dots	not complete	1.0	2.8	
Nuštar – Žankovac	B	three-pointed star	3.4 x 3.3	0.7	1.9	
Pačetin – Pazarište	A	triskele	not complete	0.6	/	
Tordinci – Močila	B	undecorated	not complete	0.7	2.7	
Retkovci – Tomašinci	B	ring-and-dot	not complete	0.6	/	
Cerna – Benić Livade	A	undecorated	not complete	0.9	2.4	
Podgrađe – Livade	A	undecorated	not complete	0.9	2.4	

Var. = variant; Dim. = dimension in centimetres; Th. = thickness in centimetres;
Diam. RP. = diameter of the rounded plate in centimetres.

Tab. 2. Trefoil-shaped terret rings with a rounded plate, from the Vinkovci region (made by: M. Dizdar)

and rarely to a degree that would indicate their original dimensions. Although these are surface finds, most of them can be assumed, in view of other finds, to have originated from Late La Tène settlements. The variant A terrets s are more numerous, and their plate is most often decorated with a triskele motif, but there are other motifs too: a cross, and a three-pointed star with dots. Two terrets have an undecorated plate. The variant B terrets are also decorated with the triskele motif, followed by three-pointed star and ring-and-dot motifs, but some are undecorated. Red or white enamel has been preserved inside the motif of two terrets.

As already mentioned, Late La Tène trefoil-shaped terret rings with a rounded protruding plate decorated with different motifs and three semi-circular loops on the lateral sides are known from the south-eastern Alpine region and Central European oppida.[26] However, new finds show increasing numbers of these terrets at the sites of the Scordisci too. Along with the finds from Osijek and the area of Vinkovci, the group finds from Veliki Vetren in south-western Serbia have great importance for identifying them as Late La Tène horse equipment, as already pointed out by D. Božič.[27]

Those finds include four terrets of variant A – two of which are preserved in their entirety and two have damaged loops. They are 4 cm high and decorated with a triskele motif.[28] A significant number of chance finds of trefoil terrets come from sites in the valleys of the Morava and the Mlava in northern Serbia. M. Stojić lists 36 buttons and trefoil terrets as chance finds, so it is assumed that they were produced there.[29] A total of ten trefoil terrets were found: one is undecorated, five are decorated with the triskele motif, three have a three-pointed star motif, and one has a three-pointed star with a ring-and-dot motif. Based on the finds from Veliki Vetren, the terrets and the buttons were dated to the Late La Tène.[30] Eight terrets probably belong to variant A[31] and one to variant B.[32] Another trefoil terret of variant B, from an unknown site in Serbia, has the plate decorated with the triskele motif. The terret, 4.2 cm high, is dated to the 1st century BC.[33]

Terrets with a rounded plate found in the south-eastern Alpine region and Central Europe were analysed by D. Božič.[34] More recent finds and their distributions have been added by M. Čižmař,[35] M.

[26] Božič 1993, 140–141, 145, Fig. 2; 2001, 184–185, Fig. 8; Čizmař 2002, 216, Fig. 18; Schonfelder 2002, 268–270, Fig. 169.

[27] Božič 2001, 185.

[28] Stojić 2003, 47–49, cat. no. 180–183; Božič 2001, 185, Fig. 9.

[29] Stojić 2001, 51.

[30] Stojić 2001, 55–57, cat. no. 27–36.

[31] Stojić 2001, 55, cat. no. 28, 30, 31, 32, 33, 34, 35, 36. The variant of one terret cannot be determined because of its state of preservation.

[32] Stojić 2001, 55, cat. no. 27.

[33] Ratković 2008, 801, Fig. 25.

[34] Božič 1993, 145, Fig. 2, List 2; 2001, 185, Fig. 8.

[35] Čižmař 2002, 216, Fig. 20; Čižmař et al. 2010, 134, Fig. 8.

Schönfelder,[36] G. Pierrevelcin,[37] and K. Pieta.[38] The variant A terret from the site of Hevlín – Ostroh in southern Moravia has the plate decorated with a triskele motif; there is also a mention of a find from the Dolní Němčí site.[39] M. Čižmař points out that five terrets come from the oppidum of Staré Hradisko,[40] so they could have been produced there.[41] The variant A terrets from the sites of Nimnica – Holíš and Trenčianske Bohuslavice have the plate decorated with a three-pointed star with white enamel.[42] There is also mention of a terret from the Jánovce – Machalovce site.[43] A particularly important find is a silver trefoil terret of variant B from the site of Cetăţeni – Colţul Doamnei on the eastern slopes of the Carpathians. A probable stone-fenced cremation grave contained cremated bones with potsherds, weapon remains, armour remains, remains of gold and silver decorations, glass beads, fragments of amphorae, bird bones etc. Aside from the terrets, the only preserved finds are fragments of gold leaf that was attached to armour by means of iron wire and rivets, and fragments of a silver decorated vessel.[44] In addition to the already known variant B terret from the Dünsberg oppidum, two more terrets of the same variant were found at the site next to gate 4. The terrets are 3.5, 3.6 and 3.9 cm high; the plate is decorated with the motifs of a cross with radially drawn quadrants, netting, and radially distributed grooves with a depression in the middle. The motifs are filled with red enamel.[45]

Analysis shows that the sites of the Scordisci are dominated by terrets of variant A, but variant B terrets have been found too. Variant A terrets were already known from sites in the south-eastern Alpine region: one from Stari Grad near Podbočje, 3.7 cm high, originating from a destroyed Late La Tène grave or settlement;[46] one from the settlement of Semenič nad Gabrom near Semič, with D-section loops;[47] and one from Sv. Marjeta near Golo.[48] Terrets of this variant are known from the Velemszentvid oppidum (3.5 cm high);[49] the Staré Hradisko oppidum (five terrets – three whole and two fragments – between 3.3 and 3.4 cm high);[50] the Hradiště oppidum near Stradonice (two terrets 3.7 cm high)[51]; the Třisov oppidum (one terret);[52] Nimnica – Holíš and Trenčianske Bohuslavice in Slovakia.[53] Terrets of variant B are known from the mentioned Padarič grave 3 from the Strmec cemetery near Bela Cerkev, 3.9 cm high;[54] the Vranja Peč site near Lipni Dol;[55] the Hrazany oppidum (preserved height: 2.9 cm);[56] and an unknown site, 3.5 high.[57] Terrets of an unknown type are those from the sites of Mont Beuvray, Gracarca,[58] Dolní Němčí,[59] and Jánovce – Machalovce.[60]

The greatest number of terrets in the area of the Scordisci have a rounded plate decorated with a triskele motif. This motif is the decoration of all but one of the terrets from Osijek (Tab. 1), most of those from the sites around Vinkovci (Tab. 2), those from Veliki Vetren, and half of those from the valleys of the Morava and the Mlava. A single terret with a rounded plate decorated with the triskele motif was found in the oppidum of Staré Hradisko[61] and in the oppidum of Hradiště near Stradonice.[62] Terrets decorated with a three-pointed star motif are known in fewer numbers: from Nuštar – Žankovac (Fig. 3: 5); three specimens from the valley of the Mlava;[63] from the oppidum of

---

36 Schönfelder 2002, 268–269, Fig. 169; 204, Tab. 46.
37 Pierrevelcin 2009, 226, Fig. 3.
38 Pieta 2010, Fig. 14B.
39 Čižmař et al. 2010, 134, Fig. 7/5; Mírová 2019, 134, Fig. 49/3, Pl. 55/5.
40 Čižmař 2002, 216; Čižmař et al. 2010, 134.
41 Pierrevelcin 2009, 226.
42 Pieta 2010, 257, Fig. 113/10, Pl. F21/4; Ježišková, Pieta 2019, 84, Fig. 13/2.
43 Pieta 2010, 257.
44 Spânu 2012, 220, Pl. 28/4.
45 Schlott 1999, 38, 76, n. 266, Pl. 14/8; Schulze-Forster 2015, 76: Pl. 14/322–323; 49/1131.
46 Stare 1973, 49, Pl. 67/21; Guštin et al. 1993, 12, 20, 34, Fig. 6/10; Božič 1993, 137, Fig. 1/2.
47 Božič 2001, 183–184, Fig. 2/3.
48 Božič 2001, 184, Fig. 6/2.
49 Foltiny 1958, 11, Pl. 4/4.
50 Meduna 1961, 9, Pl. 7/18–19; 1970, 45, Pl. 4/15–16; Božič 1993, 140–141, Fig. 3/1–3; Mírová 2019, 133, Fig. 49/4–8, Pl. 59/1–5.
51 Píč 1903, Pl. XII/10; Filip 1956, Pl. 125/8; Břeň 1959, 211, Pl. VIII/7, 9.
52 Břen 1991, 741, Fig. on p. 544.
53 Pieta 2010, 257, Fig. 113/10, Pl. F21/4; Ježišková, Pieta 2019, 84, Fig. 13/2.
54 Dular 1991, 88, Pl. 51/26; Božič 1993, 141, Fig. 3/5.
55 Božič 2001, 184, Fig. 6/1.
56 Jansová 1959, Fig. 6/27; 1988, 19, 115, Pl. 98/10.
57 Balen 2003, 10, 57, cat. no. 22.
58 Božič 1993, 145.
59 Čižmař et al. 2010, 134.
60 Pieta 2010, Fig. 14B.
61 Božič 1993, 140–141, Fig. 3/2; Čižmář 2002, 216, Pl. 18/2.
62 Píč 1903, Pl. XII/10; Filip 1956, Pl. 125/8; Břeň 1959, 211, Pl. VIII/9.
63 Stojić 2001, 55, cat. no. 33–35.

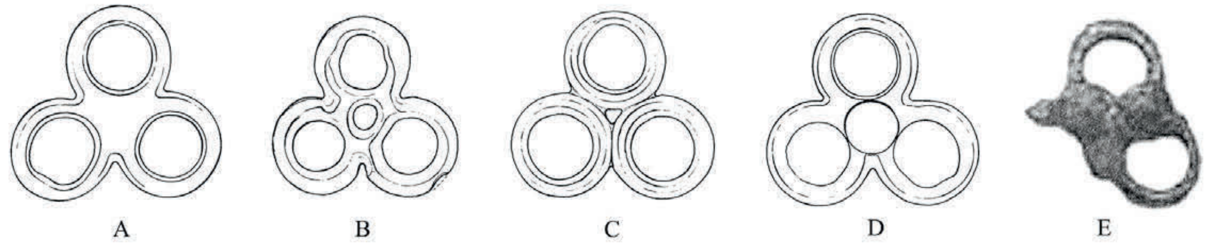


Fig. 4. Variants A – E of trefoil-shaped terret rings without a rounded plate (made by: D. Ložnjak Dizdar)

Velemszentvid;[64] two terrets from the oppidum of Staré Hradisko;[65] and Nimnica – Holíš and Trenčianske Bohuslavice in Slovakia.[66] Decoration combining a three-pointed star with dots were found at the settlement of Rokovci – Đubraci (Fig. 3: 4); a combination of a three-pointed star with ring-and-dots were represented with one specimen in the Mlava valley;[67] and one specimen at the settlement of Semenič nad Gabrom near Semič.[68] A unique decoration was identified on a terret from Osijek, as its plate was decorated with the motif of a triangle (Fig. 2: 4). A decoration of three semicircles was identified at the sites of Stari Grad near Podbočje,[69] the oppidum of Staré Hradisko,[70] and the oppidum of Stradonice.[71] A netting motif decoration was found on a terret from the site of Sv. Marjeta near Golo,[72] the mentioned Padarič 3 female grave in the Strmec cemetery near Bela Cerkev,[73] the Hrazany oppidum,[74] and the terret from the Dünsberg oppidum.[75] The motif of a cross with radially drawn quadrants was found on two terrets from the Dünsberg oppidum.[76] The cross motif is known from a terret in the settlement of Vinkovci – Blato (Fig. 3: 2).[77] There is also an exceptional decoration with a ring-and-dot motif on a terret from the site of Retkovci – Tomašinci (Fig. 3: 8). Undecorated plates have been found on terrets from the sites of Tordinci – Močila, Cerna – Benić Livade, and Podgrađe – Livade (Fig. 3: 7, 9–10), on a terret from the Mlava valley,[78] Vranja Peč near Lipni Dol,[79] an unknown site,[80] and one terret each from the oppidum of Staré Hradisko[81] and the oppidum of Třisov.[82]

We should mention that red enamel was preserved on the terrets from Osijek,[83] Vinkovci – Blato,[84] the Mlava valley,[85] an unknown site in Serbia,[86] Stari Grad near Podbočje,[87] and Hrazany.[88] Yellow enamel was preserved on two terrets from the oppidum of Staré Hradisko, and white in the settlement of Mirkovci – Malat and Trenčianske Bohuslavice.[89] Another terret from the Mlava valley is described as having light paste preserved inside the motif.[90]

---

64 Foltiny 1958, 11, Pl. 4/4.

65 Meduna 1970, 45, Pl. 4/15–16; Božič 1993, 140–141, Fig. 3/1; Čižmář 2002, 216, Pl. 18/1, 3.

66 Pieta 2010, 257, Fig. 113/10, Pl. F21/4; Ježišková, Pieta 2019, 84, Fig. 13/2.

67 Stojić 2001, 55, cat. no. 36.

68 Božič 2001, 183–184, Fig. 2/3.

69 Božič 1993, 137, Fig. 1/2.

70 Meduna 1961, 9, Pl. 7/19; Božič 1993, 140–141, Fig. 3/3; Čižmář 2002, 216, Fig. 18/4.

71 Břeň 1959, 211, Pl. VIII/7.

72 Božič 2001, 184, Fig. 6/2.

73 Dular 1991, 57, 88, Pl. 51/26; Božič 1993, 141, Fig. 3/5.

74 Jansová 1959, Fig. 6/27; 1988, 19, 115, Pl. 98/10.

75 Schulze-Forster 2015, 76, Pl. 14/323.

76 Schlott 1999, 38, 76, n. 266, Pl. 14/8; Božič 1993, 141, Fig. 3/4, Schulze-Forster 2015, 76: Pl. 14/322; 49/1131.

77 Dizdar 2001, 114, Pl. 5/11.

78 Stojić 2001, 55, cat. no. 27.

79 Božič 2001, 184, Fig. 6/1.

80 Balen 2003, 10, 57, cat. No. 22.

81 Meduna 1961, 9, Pl. 7/18; Čižmář 2002, 216, Pl. 18/5.

82 Břen 1991, 741, Fig. on p. 544.

83 Dizdar, Filipović 2020, 92, Fig. 10/6.

84 Dizdar 2016, 40, Fig. 13/4.

85 Stojić 2001, 55, cat. no. 30, 34.

86 Ratković 2008, 801, Fig. 25.

87 Božič 1993, 137, Fig. 1/2.

88 Jansová 1988, 19.

89 Pieta 2010, 257, Pl. F21/4.

90 Stojić 2001, 55, cat. no. 35.

SU	SF No. / AMO Inv. No.	Var.	Dim.	Th.	Ex. Diam. R.
55	317 / 230929	B	3.4 x 3.3	0.3	1.7
538	357 / 230952	C	4.0 x 3.9	0.4	2.0
336	384 / 230953	C	3.7 x 3.4	0.3	1.8
676	535 / 230958	D	4.2 x 4.1	0.7	2.1

SU = stratigraphic unit; SF No. = special find number; Var. = variant; Dim. = dimension in centimetres;
Th. = thickness in centimetres; Ex. Diam. R. = external diameter of loops in centimetres.

Tab. 3. Trefoil-shaped terret rings without a rounded plate, from the Osijek – Barracks site (made by: M. Dizdar)

Trefoil-shaped terret rings without a rounded plate

The results of the excavations of the Scordisci sanctuary in Osijek showed that Late La Tène terrets can also include objects composed of three conjoined rings with different shapes in the central joint of the rings.[91] The terrets were cast in one piece; their trefoil shape is close to the terrets described earlier, but they do not have a central rounded protruding plate. Four such terrets were found in Osijek (Fig. 5); they show certain differences in the shape of the central joint of the round- or oval-section rings. Their dimensions are between 3.3 and 4.2 cm, and their thickness between 0.3 and 0.4 cm, except for the terret with a knob, with a thickness of 0.7 cm (Tab. 3).

Along with the finds from Osijek, two such terrets from Veliki Vetren also point to horse equipment.[92] Here we might add some other finds from the sites in the area of Vinkovci (Fig. 6). One similar find from Sisak with a full central part is believed to have been a piece of horse equipment.[93] Objects consisting of three rings with different shapes of the central part were found at other sites too – in the south-eastern Carpathian Basin, in the south-eastern Alpine region, and in the wider region of Central Europe. However, the contexts of these finds are unknown, so these objects could have had some other purpose. Nevertheless, we mention them here because of their shape, which corresponds to the finds from Osijek and Veliki Vetren.

Considering the shape of the central part at the joint of the rings, we can single out five variants of Late La Tène trefoil terrets without a rounded plate (A – E) (Fig. 4). Variant A consists of terrets with a full middle, i.e., without an aperture at the joint of the rings. Variant B consists of terrets with a circular aperture in the middle, and variant C of those with a triangular aperture. Variant D is characterised by a protruding knob in the middle of one side, while the other side is smooth. Variant E has three small protrusions in the middle of one side. The rings usually have a round or oval cross-section.

Variant A

Aside from the mentioned possible terret with a full middle from Sisak, 3.9 cm high,[94] this variant would include a terret from the bank of the Danube near Zemun, 4.0 cm high. That site is the origin of a large number of finds of the La Tène culture; the terret was published as a pendant and dated to the Early Iron Age.[95] A terret with a full middle was found at the Staré Hradisko oppidum; it measures 3.0 x 3.2 cm.[96]

Variant B

One variant B terret is known from Osijek (Fig. 5: 3). Finds from two sites in the Vinkovci region include similar objects, but their rings have a narrow oval or D-shaped cross-section (Fig. 6: 1–2), so it is unclear whether they are terrets or, more likely, pendants. An item of small dimensions composed of three rings with a circular aperture in the middle was found at the Ivankovo – Slatine site; its D-section rings are flat on the underside. The site of Ivankovo – Nadiševci is the origin of a fragment with two preserved oval-section rings and an aperture in the middle.[97]

91 Dizdar, Filipović 2020, 92, Fig. 10/7.

92 Stojić 2003, 49, cat. no. 184–185.

93 Dizdar, Drnić 2018, 90.

94 Dizdar, Drnić 2018, 90, Fig. 12/2.

95 Todorović 1971, 98, Pl. XLVII/1.

96 Meduna 1961, 5, Pl. 3/6; Čizmař 2002, 217, Fig. 22/8.

97 This find was mentioned in the analysis of the Late La Tène triple knobbed loops (Dizdar et al. 2022, 222, Fig. 13/6), but it differs from them because it has no protrusions on the loops.

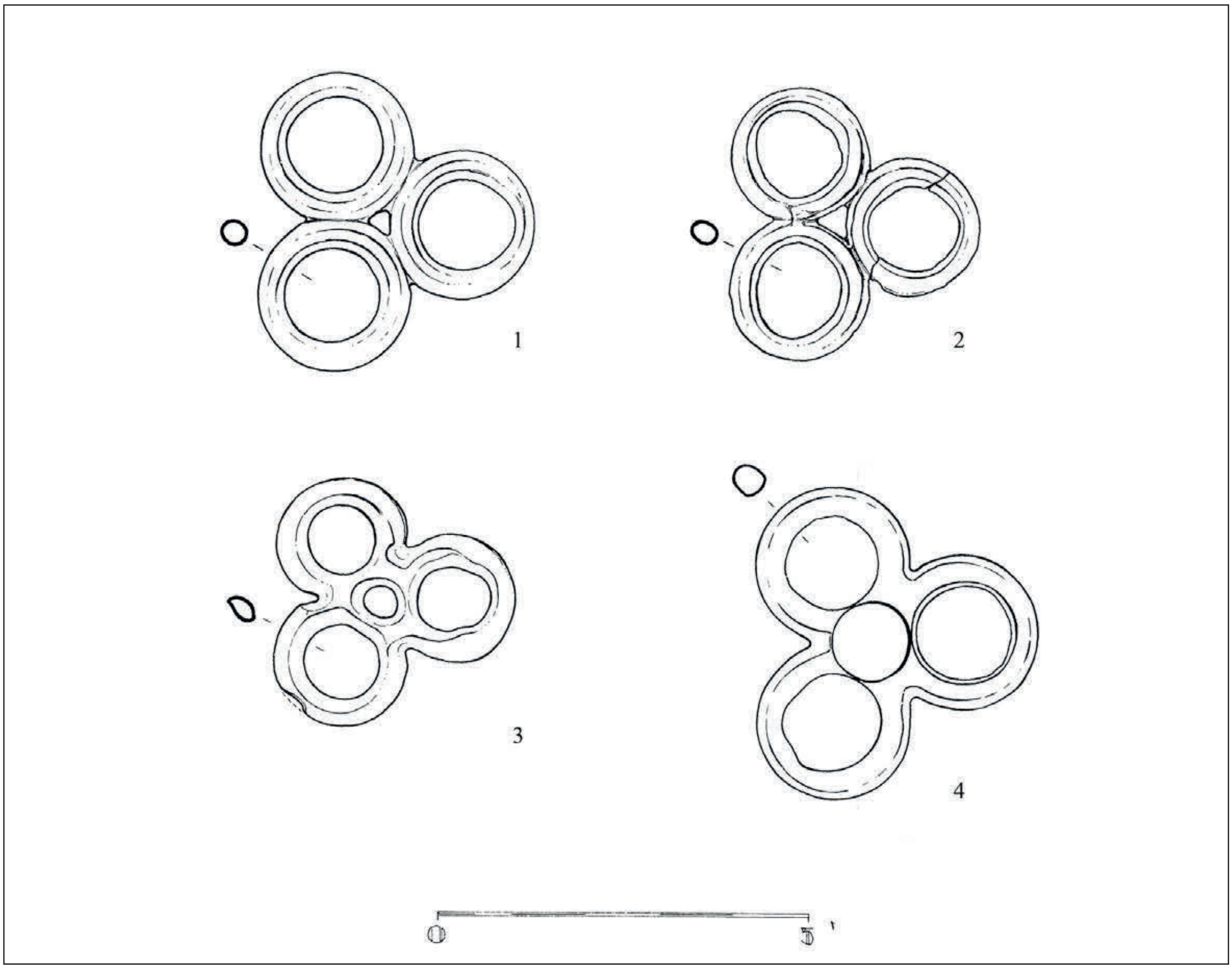


Fig. 5. Trefoil-shaped terret rings without a rounded plate, from the Osijek – Barracks site (drawn by: M. Rončević)

A terret with a circular aperture was found at the Velemszentvid oppidum and defined as a pendant of variant l.[98] A trefoil object with a central circular aperture was found in the cemetery of Rohr in Styria, where destroyed graves contained weaponry and female costume items dated to LT C2. It is believed to be a pendant; one ring had an attached larger ring with separated terminals.[99] This find shows that some trefoil objects could have had another function, and that caution is needed when defining them as Late La Tène terrets.

Variant C

Numerous terrets with a central triangular aperture have been found. Two such terrets were found in Osijek (Fig. 5: 1–2); another two, 3.5 cm high, come from Veliki Vetren.[100] A terret with a triangular aperture is known from the Velemszentvid oppidum.[101] The Staré Hradisko oppidum included three terrets with a triangular aperture, which measure 3.2 x 3.0 cm;[102] the Stradonice oppidum also included a terret with a central triangular aperture.[103] A fragment of a terret with three round-section rings around a triangular aperture, two of them preserved and one partly preserved, was found at the site of Polkovice and dated to LT C2–D1.[104]

98 von Miske 1908, 46, Pl. XXXVIII/21.

99 Modrijan 1958, 9, Fig. 3/5; Kramer 1994, 17, 32, Pl. 34/5.

100 Stojić 2003, 49, cat. no. 184–185.

101 von Miske 1908, 46, Pl. XXXVIII/20.

102 Meduna 1961, 5, Pl. 3/7; 1970, 45, Pl. 4/9; Čizmař 2002, 217, Fig. 22/5–7.

103 Píč 1903, Pl. XIII/42.

104 Čizmař, Danielisová 2021, Fig. 10/9.

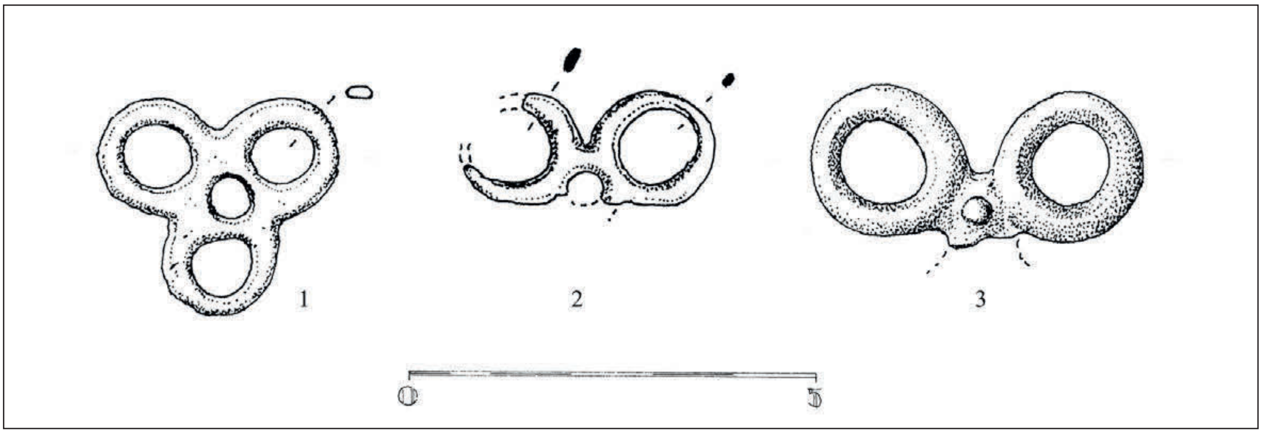


Fig. 6. Trefoil-shaped pendants or terret rings without a rounded plate, from the Vinkovci region: 1 Ivankovo – Slatine; 2 Ivankovo – Nadiševci; 3 Bobota – Silaš (drawn by: M. Marjanović Lešić)

Variant D

A trefoil-shaped terret of this variant was found in Osijek (Fig. 5: 4).[105] The site of Bobota – Silaš, west of Vukovar, included a fragment of a similar object, with a small central knob between the rings, which are not directly conjoined and have a lenticular cross-section (Fig. 6: 3).[106] A trefoil-shaped terret with a central knob, around 2.5 cm high, is a chance find from the fortified settlement of Bükkzsérc – Hódos-tető in north-eastern Hungary, which is the origin of metal objects dated from the Late Bronze Age to the Middle Iron Age.[107] The object was defined as a pendant of the Sankt Katherein type; based on parallels, it was dated from the Late Bronze Age (Ha A–Ha B1) to the Middle Iron Age (Ha C).[108]

Variant E

This variant, with three small central protrusions, currently consists of only one small terret, measuring 2.2 x 1.2 cm, from the site of Břeclav – Žleby.[109]

Trefoil objects cast in one piece and composed of three joined round-section rings with a differently shaped central plate can be considered objects of Late La Tène horse equipment, as evidenced by the finds from Osijek and Veliki Vetren. These objects originating from Central European oppida probably also had the same function. Other finds have unknown contexts, which makes it harder to identify them as items of horse equipment – they could have had some other use.[110] These trefoil objects were pointed out by M. Čižmař,[111] who associates them with pendants of the same shape dated to the Late Hallstatt period. These pendants, with a rhombic or round cross-section of the rings, were analysed by T. F. Warneke, who pointed out that their distribution between the Late Hallstatt and Middle La Tène periods stretched from eastern France to northern Italy and Slovenia, with significant numbers in the cemeteries of Este and Most na Soči.[112] Also probably serving in this role, the trefoil-shaped pendant with a central rhombic aperture, originating from female inhumation grave 34, from the plot of M. Petrović Jr. in Donja Dolina, was dated to the phase of serpentine fibulae. The rings of this pendant are not conjoined directly – they do not touch.[113] M. Čižmař notes that such objects are also known from Central European oppida; for this reason, he dated them to the Middle and Late La Tène.[114] The last analysis by Z. Mírová describes the trefoil terrets of the Staré Hradisko type and places those with three conjoined rings into another variant, dating them to LT C2–D1.[115]

---

105 Dizdar, Filipović 2020, 92, Fig. 10/7.

106 A similar silver object with a knob in the centre was found at the settlement in Donja Dolina and described as a trefoil-shaped pendant (Truhelka 1904, 75, Pl. XXXVII/18; Marić 1964, Pl. XV/21). The rings seem to be partly grooved.

107 Szabó, Bíró 2010, 81, Fig. 8/1.

108 Szabó, Bíró 2010, 81.

109 Mírová 2019, 134, 278, Fig. 49/2, Pl. 55/2.

110 Dizdar, Drnić 2018, 90.

111 Čižmař 2002, 217, Fig. 24.

112 Warneke 1999, 86–87, Fig. 39–40. Also: Nascimbene 2009, 36–39, Fig. 10, Tab. 1.

113 Truhelka 1904, 97, Pl. XLVII/14.

114 Čižmař 2002, 217.

115 Mírová 2019, 133–134, 157, Fig. 65; 2020, 361, 365, Fig. 6.

Another piece of evidence that objects composed of three conjoined rings (*Dreipass*) are a long-period form is the fact that the variant D terret from the fortified settlement of Bükkzsérc – Hódos-tető is defined as a pendant of the Sankt Katherein type,[116] dated from the Late Bronze Age to the Middle Iron Age.[117] However, these Late Bronze Age pendants, like those from the Late Hallstatt, show certain formal differences compared to the Late La Tène trefoil-shaped terrets. The Late Bronze Age pendants of the Sankt Katherein type have rhombic cross-section rings that are not conjoined directly, but usually with an arm, while the central aperture is much larger.[118] Two pendants of this type, composed of three rings but of a different shape, are known from the hoard of Bingula – Divoš.[119] In Hungary, trefoil pendants of the Sankt Katharein type are known from the hoard of Lengyeltóti III and from grave 196 in the cemetery of Budapest – Békásmegyer.[120] The pendant from cremation grave 196, measuring 3 cm, is composed of three small rings connected with an undecorated strap-section plate.[121] These pendants are dated to the early, older and the middle Urnfield culture; they might have served as chain distributors or junctions between a pin and several pendants. Along with the Carpathian Basin, they are distributed in southern Germany, Lower Austria, and northern Italy.[122] They are also associated with the two mentioned Late La Tène terrets from the Velemszentvid oppidum.[123] A trefoil pendant composed of three soldered rings (*Dreipass*) was discovered in Late Bronze Age cremation grave VII from Bilstrup in Denmark, containing an adult.[124] Trefoil pendants represent a small group of objects measuring between 2.5 and 5 cm, which is described as being widely distributed from Norway to Veneto in northern Italy, from the middle of the Late Bronze Age to the beginning of the Iron Age. The rings could have been cast separately and then soldered, or it could have been a single cast object. Since the basic form is the same and widely distributed, it is assumed they were produced locally. They are found most often in graves of women, possibly children, and they could have hung on an object and served as an amulet pendant.[125] Similarities with Late La Tène terrets are shown by Late Hallstatt trefoil pendants with rhombic or round cross-section rings and a smaller round or triangular aperture in the central part.[126] Trefoil objects composed of three conjoined rhombic cross-section rings, measuring between 2.6 and 3.8 cm in diameter, and with a full middle, were also items of belt sets of the Libna type, which are most frequent in the Lower Carniola group of the Early Iron Age.[127] They appear in the Podzemelj 2 phase, usually in male graves, singly or in pairs.[128]

The above examples show that trefoil-shaped items (*Dreipass*) were a simple, long-period, and widely distributed form that could have different functions, and are most often considered to be pendants. Without the context of the find and a more detailed description, it is hard to date them more precisely, especially the simpler forms. Still, the finds from Osijek and Veliki Vetren, as well as those from some Central European oppida, show that these objects, or at least some of them with round or oval cross-section rings, were most probably Late La Tène items of horse equipment.

---

116 Szabó, Bíró 2010, 81, Fig. 8/1.

117 Szabó, Bíró 2010, 81.

118 Wels-Weyrauch 1991, 84–88, Pl. 29/728–729; 43B.

119 Vinski-Gasparini 1973, Pl. 86/21–22.

120 Mozsolics 1985, 143, Pl. 108/23; Jankovits 2009, Fig. 3/6; 2017, 195, Pl. 71/2508.

121 Kalicz-Schreiber 2010, 120, 273, Pl. 87/7.

122 Jankovits 2009, 427; 2017, 195–196, Pl. 108A.

123 Jankovits 2017, 195, Pl. 71/2509–2510.

124 Hornstrup 2015, 77, Fig. 1.

125 Hornstrup 2015, 77–79, 85–86, 90.

126 Warneke 1999, 86–87, Fig. 39; Nascimbene 2009, 36–39, Fig. 10, Tab. 1. For example, a trefoil object described as a terret, 2 cm high, was found in the cemetery of Tržišče in Inner Carniola, with a spirally twisted pendant hanging on it (Guštin 1979, 37, Pl. 30/1).

127 Stare 1963, 399–400, Fig. 8/1–7

128 Guštin, Preložnik 2005, 137–142, Fig. 22/14–15; 23.

129 Werner 1984, 147–149; 1985; 1988, 81–101; Balen-Letunić 1986; Łuczkiewicz, Schönfelder 2011, 186–195.

130 Dizdar 2020.

131 Stojić 2003.

132 Dizdar, Filipović 2020.

133 Dizdar 2001, 114; 2016, 40.

134 Stojić 2001, 51–56, Fig. 1–36.

135 Dizdar 2016, 40.

136 Dizdar, Mehofer 2022.

137 Schlott 1999, 38, n. 266.

138 Božič 1993, 140–141, Fig. 6; 2001, 184–185, Fig. 8; Schönfelder 2002, 268–270, Fig. 169; Čizmař 2002, 216, Fig. 18, 20; Čižmař et al. 2010, 134, Fig. 8; Pierrevelcin 2009, 226, Fig. 3; Pieta 2010, Fig. 14B.

139 For example, Rustoiu 2005; 2008; Łuczkiewicz, Schönfelder 2011 etc.

140 Spânu 2012, 220, Pl. 28/4.

141 Egri, Rustoiu 2008; Dizdar, Filipović 2020.

Conclusion

The Late La Tène finds from the sites of the Scordisci include numerous and varied items of horse equipment. Most are chance finds; only a few come from excavations of cemeteries or settlements. The greatest number of them are iron bits of the Thracian type XVI,[129] while other copper alloy objects were less known (such as rectangular bronze zoomorphic buckles with knobs).[130] However, this state of research was changed by two very important discoveries – the group find of weaponry and horse equipment at Veliki Vetren[131] and the Late La Tène sanctuary in Osijek,[132] dated to LT D1 – which revealed the heterogeneous nature of the Late La Tène horse equipment of the Scordisci. Even though their composition is dominated by different forms of buttons, trefoil-shaped terrets have been identified. The terrets are represented by two basic shapes with variants – trefoil-shaped terrets with and without a rounded plate. Along with buttons, these terrets have been found at many sites, which were probably settlements, in the area of Vinkovci[133] and in the valleys of the Morava and the Mlava in northern Serbia.[134] The large number of these finds indicates they were probably produced in local workshops, which is confirmed by two unfinished buttons found at the settlement of Vinkovci – Blato.[135] Even though there have been no archaeometallurgical analyses yet, the darker colour of some terrets would indicate that they were made of an alloy of copper and lead or arsenic, which has already been documented for the composition of Middle and Late La Tène buckles and segments of astragal belts.[136] The trefoil-shaped terrets with a rounded plate were decorated with different motifs filled with enamel of various colours (most often red). This is an indicator of the skill of the craftsmen that produced these technologically demanding objects. Their use on horse harnesses seems to be indicated by the fact that the semi-circular loops are often larger at the joint with the plate than on top, probably because they were worn from straps on that side. It is believed that the terrets were on the horse's head near the ears, and therefore quite visible, which is why they were decorated with enamel.[137]

Both basic shapes of Late La Tène trefoil terrets, especially those with a decorated rounded plate, were found not only at the sites of the Scordisci, but also in the regions of Central Europe and the south-eastern Alps,[138] indicating that it was a popular and useful item of Late La Tène horse equipment, which was used by different communities. Interestingly, both types of terrets at this moment are unknown at the sites of the Padea Pangjuruski Kolonii group during the second half of the 2nd century and the beginning of the 1st century BC, especially in graves with numerous finds of iron horse bits, buckles, and spurs.[139] The only known find is a silver terret from a probable grave at the site of Cetăţeni – Colţul Doamnei.[140] Some finds of trefoil-shaped terrets without a central plate (Fig. 4) could have been pendants of the same shape, which appear over a long period. However, some of these objects, especially from the sites of the Scordisci, served as terrets, as shown by the finds from Veliki Vetren and Osijek.

The large number and variety of Late La Tène items of horse equipment of the Scordisci, which include trefoil-shaped terrets of both types, can be associated with mounted warriors, who had the most prominent position in communities, i.e., who encompassed various local identities and were united by a warrior aristocracy. Their burials are recognised by the presence of weaponry and rich offerings consisting of ceramic and bronze vessels,[141] while horse equipment appears only rarely in graves (e.g., Karaburma grave 92, Hrtkovci). Considering the number and variety of finds of horse equipment, as shown by the finds in the Vinkovci area, it can be assumed that mounted warriors had a prominent role and social importance in local communities, one of whom decided to display their gifts in the sanctuary in Osijek.

We hope that future analyses of other Late La Tène objects from the sites of the Scordisci will show that they are items of horse equipment, since the Scordisci were described by ancient sources as excellent horsemen, which was probably helped by their horse harnesses, including trefoil-shaped terrets.

BIBLIOGRAPHY:

Balen 2003 – J. Balen, Pretpovijesni predmeti, in: *Na tragovima vremena. Iz arheološke zbirke Mateja Pavletića*, J. Balen (ed.), Arheološki muzej u Zagrebu, Zagreb 2003, 9–11, 54–57.

Balen-Letunić 1986 – D. Balen-Letunić, Latenske žvale iz Slavonskog Kobaša. *Vjesnik Arheološkog muzeja u Zagrebu* XIX, 1986, 141–145.

Božič 1981 – D. Božič, Relativna kronologija mlajše železne dobi v jugoslovenskem Podonavju. *Arheološki vestnik* 32, 1981, 315–336.

Božič 1984 – D. Božič, O starosti konjeniškega groba št. 16 z latenskega grobišča na beograjski Karaburmi, in: *Keltski voz*, M. Guštin (ed.), Posavski muzej Brežice Knjiga 6, Brežice 1984, 133–139.

Božič 1993 – D. Božič, Slovenija in srednja Evropa v poznolatenskem obdobju. *Arheološki vestnik* 44, 1993, 137–152.

Božič 1999 – D. Božič, Die Erforschung der Latènezeit in Slowenien seit Jahr 1964. *Arheološki vestnik* 50, 1999, 189–213.

Božič 2001 – D. Božič, Ljudje ob Krki in Kolpi v latenski dobi. *Arheološki vestnik* 52, 2001, 181–198.

Božič 2018 – D. Božič, Dvoje iznimne konjske žvale dačkog tipa iz rijeke Kupe kod Siska / Two exceptional horse bits of Dacian type from the river Kupa at Sisak, in: *Segestika i Siscija – Od ruba imperija do provincijskog središta*, I. Drnić (ed.), Katalozi i monografije Arheološkog muzeja u Zagrebu Svezak 16, Zagreb 2018, 131–150.

Břeň 1959 – J. Břeň, Zlaté předměty z keltského oppida ve Stradonicích u Berouna. *Acta Universitatis Carolinae Philosophica et Historica* 3, 1959, 207–216.

Břen 1991 – J. Břeň, L'oppidum di Třisov, in: *The Celts*, S. Moscati, V. Kruta, O. H. Frey, B. Raftery, M. Szabó (eds.), Thames and Hudson, Milano 1991, 544.

Čizmař, Danielisová 2021 – I. Čižmář, A. Danielisová, Central Sites and the Development of Rural Settlements from the Middle to Late La Tène Period in Central Moravia. *Památky archeologické* 112, 2021, 197–236.

Čižmář 2002 – M. Čižmář, Laténský depot ze Ptení k poznání kontaktu našeho území s jihem. *Památky archaeologické* 93/2, 2002, 194–225.

Čižmař et al. 2010 – M. Čižmář, J. Čižmářová, M. Kejzlar, E. Kolniková, Detektorová prospekce archeologických lokalit na Moravě v roce 2009. *Přehled výzkumů* 51, 2010, 125–137.

Dizdar 2001 – M. Dizdar, Nalazišta latenske kulture na vinkovačkom području. *Prilozi Instituta za arheologiju u Zagrebu* 18, 2001, 103–134.

Dizdar 2016 – M. Dizdar, Late La Tène settlements in the Vinkovci region (Eastern Slavonia, Croatia): Centres of trade and exchange, in: *Boii – Taurisci, Proceedings of the International Seminar, Oberleis-Klement, June 14th–15th, 2012*, M. Karwowski, P. C. Ramsl (eds.), Mitteilungen der Prähistorischen Kommission Band 85, Wien 2016, 31–48.

Dizdar 2020 – M. Dizdar, Riders on the Storm – The Late La Tène Bronze Buckles of the Horse Gear in the South-eastern Carpathian Basin, in: *Tracii şi vecinii lor în Antichitate: arheologie şi istorie / The Thracians and Their Neighbours in Antiquity: Archaeology and History*, Studies in Honor of Valeriu Sîrbu at his 70th Anniversary, I. Cândea (ed.), Editura Istros a Muzeului Brăilei „Carol I", Brăila 2020, 205–222.

Dizdar, Drnić 2018 – M. Dizdar, I. Drnić, Segestanski ratnici – Nalazi naoružanja i konjske opreme latenske kulture iz Siska / Segestan warriors – Finds of weapons and horse-riding equipment of the La Tene culture from Sisak, in: *Segestika i Siscija – Od ruba imperija do provincijskog središta*, I Drnić (ed.), Katalozi i monografije Arheološkog muzeja u Zagrebu Svezak 16, Zagreb 2018, p. 63–108.

Dizdar, Filipović 2020 – M. Dizdar, S. Filipović, A Late La Tène Scordiscan Sanctuary from Osijek (Eastern Slavonia, Croatia)?, in: *Temples and Cult Places from the Second Iron Age in Europe*, *Proceedings of the 2nd International Colloquium "Iron Age Sanctuaries and Cult Places at the Thracians and their Neighbours", Alun (Romania), 7th–9th May 2019*, V. Sîrbu, A. Peţan (eds.), Dacica, Alun 2020, 87–109.

Dizdar, Mehofer 2022 – M. Dizdar, M. Mehofer, Results of the Archaeometallurgical Analysis of the Late Hallstatt and La Tène Astragal Belts — New Insight into Technological Knowledge of Their Production, in: *Iron Age Female Identities in the Southern Carpathian Basin*, M. Dizdar (ed.), Zbornik Instituta za Arheologiju Volume 19, Institute of Archaeology, Zagreb 2022, 102–117.

Dizdar et al. 2022 – M. Dizdar, M. Ljuština, A. Tonc, Late La Tène Bronze Knobbed Rings and Armrings in the South-Eastern Carpathian Basin: Beloved Jewellery and Amulets of the Scordiscan Women?, in: *Iron Age Female Identities in the Southern Carpathian Basin*, M. Dizdar (ed.), Zbornik Instituta za Arheologiju Volume 19, Institute of Archaeology, Zagreb 2022, 198–231.

Dular 1991 – A. Dular, *Prazgodovinska grobišča v okolici Vinjega vrha nad Belo Cerkvijo*. Katalogi in monografije 26, Narodni muzej Slovenije, Ljubljana 1991.

Egri, Rustoiu 2008 – M. Egri, A. Rustoiu, The Social Significance of Conviviality in the Scordiscian Environment, in: *Funerary Practices of the Bronze and Iron Ages in Central and South-Eastern Europe*. *Proceedings of the 9th International Colloquium of Funerary Archaeology, Bistriţa, Romania*

May 9th–11th 2008, V. Sîrbu, S. L. Vaida (eds.), Editura Mega, Cluj–Napoca 2008, 83–93.

Filip 1956 – J. Filip, *Keltové ve Střední Evropě*. Monumenta Archaeologica Tomus V, Acta Praehistorica, Protohistorica et Historica Instituti Archaeologici Academiae Scientarum Bohemoslovenicae, Pragae 1956.

Филиповић 2009 – В. М. Филиповић, Мамузе из млађег гвозденог доба у Србији, *Гласник Српског Археолошког Друштва* 25, 2009, 163–188.

Foltiny 1958 – S. Foltiny, *Velemszentvid, Ein urzeitliches Kulturzentrum in Mitteleuropa*. Veröffentlichungen der Österreichischen Arbeitgemeinschaft für Ur- und Frühgeschichte Band III, Wien 1958.

Guštin 1984 – M. Guštin, Die Kelten in Jugoslawien. *Jahrbuch des Römisches-Germanisches Zentralmuseum* 31, 1984, 305–363.

Guštin 1979 – M. Guštin, *Notranjska: k začetkom železne dobe na severnem Jadranu*, Katalogi in monografije 17, Narodni muzej Slovenije, Ljubljana 1979.

Guštin et al. 1993 – M. Guštin, R. Cunja, K. K. Predovnik, *Podbočje/Stari grad*. Posavski muzej Brežice Knjiga 9, Brežice 1993.

Guštin, Preložnik 2005 – M. Guštin, A. Preložnik, Sajevce, Železnodobno gomilno grobišče ob Krki. *Arheološki vestnik* 56, 2005, 113–168.

Guštin, Stanković Pešterac 2020 – M. Guštin, T. Stanković Pešterac, Die ostkeltischen spätlatènezeitlichen Wagengräber im Burgmuseum Deutschlandsberg und aus Hrtkovci –Vukoder in Syrmien, *Vjesnik Arheološkog muzeja u Zagrebu* LIII, 2020, 51–83.

Hornstrup 2015 – K. M. Hornstrup, Dreipassen – en magisk genstand?. *Kuml 2015*, Årbog for Jysk Arkæologisk Selskab, I Kommission hos Aarhus Universitetsforlag, 2015, 77–98.

Jankovits 2009 – K. Jankovits, Beiträge zu den Anhängern im spätbronzezeitlichen Depotfund von Nadap. *Acta Archaeologica Academiae Scientiarum Hungaricae* LX/2, 2009, 375–383.

Jankovits 2017 – K. Jankovits, *Die bronzezeitlichen Anhängern in Ungarn*. Studia ad Archaeologiam Pazmaniensia 9, Archaeolingua, Budapest 2017.

Jansová 1959 – L. Jansová, Studné na laténských pidech. *Památky archeologické* L/2, 1959, 557–578.

Jansová 1988 – L. Jansová, *Hrazany, Das keltische Oppidum in Böhmen II, Die Gehöfte in der mittleren Senkung*. Archeologický ústav ČSAV, Praha 1988.

Ježišková, Pieta 2019 – L. Ježišková, K. Pieta, Laténske hradisko v Stupnom. *Študijné zvesti Archeologického Ústavu SAV* 65, 2019, 71–88.

Kalicz-Schreiber 2010 – R. Kalicz-Schreiber, *Ein Gräberfeld der Spätbronzezeit von Budapest-Békásmegyer*. L'Harmattan, Budapest 2010.

Kramer 1994 – M. Kramer, *Latènefunde der Steiermark*. Kleine Schriften aus dem Vorgeschichtlichen Seminar der Philipps-Universität Marburg 43, Marburg 1994.

Łuczkiewicz, Schönfelder 2011 – P. Łuczkiewicz, M. Schönfelder, Untersuchungen zur Ausstattung eines späteisenzeitlichen Reiterkriegers aus dem südlichen Karpaten- oder Balkanraum. *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz* 55 (2008), 2011, 159–210.

Marić 1964 – Z. Marić, Donja Dolina. *Glasnik zemaljskog muzeja* XIX, 1964, 5–128.

Meduna 1961 – J. Meduna, *Staré Hradisko. Katalog nálezú uložených v muzeu města Boskovic*. Fontes Archaeologiae Moravicae Tomus II, Brno 1961.

Meduna 1970 – J. Meduna, *Staré Hradisko II. Katalog der Funde aus den Museen in Brno /Brünn/, Praha /Prag/, Olomouc, Plumlov und Prostějov*. Fontes Archaeologiae Moravicae Tomus V, Brno 1970.

Mírová 2019 – Z. Mírová, *The Horse in the Bronze and Iron Ages in Moravia*. Archaeologica Olomuncensia Tomus III, Univerzita Palackého v Olomouci, Olomouc 2019.

Mírová 2020 – Z. Mírová, Vůz a koňský postroj v době laténské na Moravě, in: *Jantarová stezka v proměnách času*, I. Čižmář, H. Čižmářová, A. Humpolová (eds.), Moravské zemské muzeum, Brno 2020, 355–383.

von Miske 1908 – K. von Miske, *Die prähistorische Ansiedelung Velem St. Vid*, Band I, Wien 1908.

Modrijan 1958 – W. Modrijan, Ein Grab der Spät-La-Tène-Zeit in Steiermark. *Schild von Steier* 8, 1958, 7–13.

Mozsolics 1985 – A. Mozsolics, *Bronzefunde aus Ungarn, Depotfundhorizonte von Aranyos, Kurd und Gyermely*. Akadémiai Kiadó, Budapest 1985.

Nascimbene 2009 – A. Nascimbene, *Le Alpi Orientali nell'Etá del Ferro (VII-V secolo a.C.)*. Fondazione Anonio Colluto, Collana „L'Album" 15, Venezia 2009.

Píč 1903 – J. Píč, *Čechy na úsvitě dějin. Hradiště u Stradonic jako historické Marobudum*. Svazek 2, Prag 1903.

Pierrevelcin 2009 – G. Pierrevelcin, Ke studiu dálkových kontaktu v pozdní době laténské. *Archeologické rozhledý* LXI/2, 2009, 223–253.

Pieta 2010 – K. Pieta, *Die keltische Besiedlung der Slowakei, Jüngere Latènezeit*, Archaeologica Slovaca Monographiae Studia Tomus XII, Nitra 2010.

Ratković 2008 – D. Ratković, Wagon and Harness Bronzes from the Roman Collection of the National Museum in Belgrade, in: *THIASOS. Festschrift für Erwin Pochmarski zum*

65. Geburtstag, Ch. Franek, S. Lamm, T. Neuhauser, B. Porod, K. Zöhrer, Wien 2008, 793–815.

Rustoiu 2005 – A. Rustoiu, The Padea-Panagjurski Kolonii Group in south-western Transylvania (Romania), in: *Celts on the Margin, Studies in European Cultural Interaction, 7th Century BC – 1st Century AD, Dedicated to Zenon Woźniak*, H. Dobrzańska, V. Megaw, P. Poleska (eds.), Kraków 2005, 109–119.

Rustoiu 2008 – A. Rustoiu, *Războinici şi societate în aria celtică Transilvăneană, Studii pe marginea mormântului cu coif de la Ciumeşti*. Interferenţe etnice şi culturale în mileniile I a. Chr. – I p. Chr. Vol . XIII, Editura Mega, Cluj-Napoca 2008.

Schlott 1999 – Ch. Schlott, *Zum Ende des spätlatènezeitlichen Oppidum auf dem Dünsberg (Gem. Biebertal-Fellingshausen, Kreis Gießen, Hessen)*. Forschungen zum Dünsbsberg 2, Éditions Monique Mergoil, Montagnac 1999.

Schönfelder 2002 – M. Schönfelder, *Das Spätlatènezeit Wagengrab von Boé (dép. Lot-et-Garonne)*. Monographien des Römisch-Germanisches Zentralmuseum Band 54, Mainz a. R. 2002.

Schulze-Forster 2015 – J. Schultze-Forster, *Die latènezeitlichen Funde vom Dünsberg*. Berichte der Kommission für Archäologische Landesforschung in Hessen 13 (2014/2015), Verlag Marie Leidorf GmbH, Rahden/Westf. 2015.

Spânu 2012 – D. Spânu, *Tezaurele dacice. Creaţia în metale preţioase din Dacia preromană*. Simetria, Bucureşti 2012.

Stare 1963 – F. Stare, Kipec ilirskega bojevnika z Vač. *Arheološki vestnik* XIII–XIV (1962–1963), 1963, 383–434.

Stare 1973 – V. Stare, *Prazgodovina Šmarjete*. Katalogi in monografije 10, Narodni muzej Slovenije, Ljubljana 1973.

Stojić 2001 – M. Stojić, Bronzana dugmad i razvodnici ukrašeni motivom triskelesa iz Pomoravlja i basena Mlave. *Viminacivm* 12, 2001, 51–65.

Stojić 2003 – M. Stojić, *Veliki Vetren*. Posebna izdanja 38, Arheološki institut, Beograd 2003.

Szabó, Bíró 2010 – V. G. Szabó, P. Bíró, Őskori magaslati erődített település Bükkzsérc-Hódos-tetőn. Előzetes jelentés a lelőhelyen végzett kutatásokról / Urzeitliche befestigte Höhensiedlung in Bükkzsérc-Hódos-tető. Vorläuiger Bericht über die Forschungen am Fundort. *Ôsrégészeti levelek* 11 (2009), 2010, 72–84.

Todorović 1971 – J. Todorović, *Katalog praistorijskih metalnih predmeta*, Katalog III, Beograd 1971.

Truhelka 1904 – Ć. Truhelka, Der vorgeschichtliche Pfahlbau im Savebette bei Donja Dolina (Bezirk Bosnisch-Gradiška), Bericht über die Ausgrabungen bis 1904. *Wissenschaftliche Mitteilungen aus Bosnien und der Herzegowina* Band IX, 1904, 1–156.

Vinski-Gasparini 1973 – K. Vinski-Gasparini, *Kultura polja sa žarama u sjevernoj Hrvatskoj*. Monografije Svezak 1, Filozofski fakultet, Zadar 1973.

Warneke 1999 – T. F. Warneke, *Hallstatt- und frühlatènezeitlicher Anhängerschmuck, Studien zu Metallanhängern des 8.–5. Jahrhunderts v. Chr. zwischen Main und Po*. Internationale Archäologie Band 50, Marie Leidorf Verlag GmbH, Rahden/Westf. 1999.

Wels-Weyrauch 1991 – U. Wels-Weyrauch, *Die Anhänger in Südbayern*. Prähistorische Bronzefunde Abteilung XI, 5. Band, Franz Steiner Verlag, Stuttgart 1991.

Werner 1984 – W. M. Werner, Latènezeitliche Transen in Jugoslavien , in: *Keltski voz*, M. Guštin (ed.), Posavski muzej Brežice Knjiga 6, Brežice 1984, 141–151.

Werner 1985 – W. M. Werner, Pferdetrensen aus Südosteuropa, Eine Übersicht. *Archäologisches Korrespodenzblatt* 15/4, 1985, 463–479.

Werner 1988 – W. M. Werner, *Eisenzeitliche Trensen an der unteren und mittleren Donau*. Prähistorische Bronzefunde Abteilung XVI, 4. Band, C. H. Beck'sche Verlagsbuchhandlung, München 1988.

Summary: MARKO DIZDAR, Institute of Archaeology, Zagreb

LATE LA TÈNE HORSE EQUIPMENT OF THE SCORDISCI – TREFOIL-SHAPED TERRET RINGS FROM EASTERN CROATIA

Key words. – Horse equipment, Late La Tène Period, Croatia, terret rings, Scordisci, mounted warriors, oppida

The various Late La Tène items of horse equipment are much more numerous at sites of the Scordisci than those from the previous phases of development. Most often, these are chance finds with no find contexts; it is rare for finds of horse equipment to come from the excavations of cemeteries or settlements. The Late La Tène horse equipment of the Scordisci include various forms of iron bits, followed by iron spurs; however, the most numerous finds are different items of horse equipment made of copper alloy. The most numerous objects in this group are differently shaped and decorated horse harness buttons, followed by trefoil-shaped terret rings, which come in two basic forms – with or without a central protruding rounded plate.

The trefoil-shaped terret rings with a rounded plate, which can be classified into two variants, are characterised by a rounded protruding central plate, which can be decorated with different motifs, the most frequent being the triskele motif. The motif was filled with enamel, usually red. On the sides, there are three semi-circular loops or three perforated leaves spreading from the middle; the loops are sometimes next to one another, and sometimes there is a small gap between them. In rare cases, there are small protrusions between the loops. In the remains of the Scordiscan sanctuary in Osijek, eight terrets with a rounded plate were found (Fig. 2; Tab. 1); all except one seem to belong to variant A. The single variant B terret is decorated with a triangle motif (Fig. 2: 4). Trefoil-shaped terret rings of this shape also have been found at nine sites in and around Vinkovci (Fig. 3; Tab. 2). Although these are surface finds, most of them have originated from the Late La Tène settlements. The variant A terrets are more numerous, and their plate is most often decorated with a triskele motif, but there are other motifs too. New finds show increasing numbers of these terrets at other sites of the Scordisci. The group finds from Veliki Vetren include four terrets of variant A. A significant number of chance finds come from sites in the valleys of the Morava and the Mlava in northern Serbia. Also, terrets with a rounded plate were found in the south-eastern Alpine region and Central Europe.

The results of the excavations of the Scordisci sanctuary in Osijek showed that Late La Tène terrets can also include objects composed of three conjoined rings with a differently shaped central plate. Four such terrets were found in Osijek (Fig. 5; Tab. 3) and two at Veliki Vetren. We might also add some other finds from the sites in the area of Vinkovci (Fig. 6). Considering the shape of the central part at the joint of the rings, we can single out five variants of trefoil terrets without a rounded plate (A–E) (Fig. 4). Variant A consists of terrets with a full middle, i.e., without an aperture at the joint of the rings. Variant B consists of terrets with a circular aperture in the middle, and variant C of those with a triangular aperture. Variant D is characterised by a protruding knob in the middle of one side, while the other side is smooth. Variant E has three small protrusions in the middle of one side. The rings usually have a round or oval cross-section. These objects originating from Central European oppida probably also had the same function. Other finds have unknown contexts, which makes it harder to identify them as items of horse equipment– they could have had some other use. These trefoil objects (*Dreipass*) were also associated with pendants of the same shape. Pendants, with a rhombic or round cross-section of the rings, were dated between the Late Hallstatt and Middle La Tène periods and stretched from eastern France to northern Italy and Slovenia. Without a context of the find, it is hard to date them more precisely, especially the simpler forms. Still, the finds from Osijek and Veliki Vetren, as well as from some Central European oppida, show that these objects, or at least some of them with round or oval cross-section rings, were most probably Late La Tène items of horse.

Trefoil-shaped terrets are represented by two basic variants – trefoil-shaped terrets with and without a rounded plate. Along with buttons, these terrets have been found at Scordiscan sites and were probably produced in local workshops. Their use on horse harnesses seems to be indicated by the fact that the semi-circular loops are often larger at the joint with the plate than on top, probably because they were worn from straps on that side. It is believed that the terrets were on the horse's head near the ears and, therefore, quite visible, which is why they were decorated with enamel. Both basic shapes of Late La Tène trefoil terrets were also found in the regions of Central Europe and the south-eastern Alps, indicating that it was a popular and useful item of Late La Tène horse equipment, which was used by different communities. The large number and variety of Late La Tène items of horse gear of the Scordisci can be associated with mounted warriors, who had the most prominent position in communities, i.e., who encompassed various local identities and were united by a warrior aristocracy.

UDC: 930.2:003.071(=124'02)(398)
904"652"(497.11)
94(37)"01"
https://doi.org/10.2298/STA2373071C
Original research article

ADAM CRNOBRNJA, National Museum of Serbia, Belgrade
SNEŽANA FERJANČIĆ, University of Belgrade, Faculty of Philosophy, Department of History, Belgrade
VESELINKA NINKOVIĆ, National Museum of Serbia, Belgrade

A NEW LATIN INSCRIPTION FROM VINČA IN BELGRADE

e-mail: a.crnobrnja@narodnimuzej.rs

Abstract. – In the summer of 2020, a fragmentary lower part of a statue base with a Latin inscription carved on its underside was accidentally discovered in Vinča, in the area of the archaeological site of Ošljane. The remains of a Roman building (presumably a *villa rustica*) were located at the aforementioned site. After the discovery, the monument was stolen, then it was soon recovered and transferred to the National Museum of Serbia. The inscription records the career of a member of the equestrian order.

Key words. – Roman honorific inscription, Belgrade, Vinča, Ošljane, *villa rustica*, *militiae equestres*, procurator

In the summer of 2020, a fragmentary epigraphic monument was discovered in the Belgrade municipality of Vinča in Serbia. The inscription, carved on the underside of a statue base, records certain steps in the career of a member of the equestrian order. Ulpius, whose cognomen is not preserved, probably hailed from Beneventum in Italy. He served as an equestrian officer in the Roman army and was decorated for bravery in the campaigns of Marcus Aurelius and Commodus. Upon completing the *militiae equestres*, Ulpius became, thereafter, procurator of the province of Dacia Apulensis.

The context of the find

The monument was accidentally discovered on July 10th, 2020, during infrastructure works along the road that leads from Smederevski Put Street to the Belgrade Vinča waste landfill.[1] A detailed survey of the terrain conducted by the archaeologists of the National Museum of Serbia established that the monument was not found *in situ*, and that there were no other finds in the surrounding area. The location where the monument was found had already been mechanically excavated, as the workers testified. Since, during the first excavations, no similar object was observed, the monument was thrown into an already excavated ditch in the interval between those two, chronologically close, campaigns of work with heavy plant.

Finds like this monument, if their discovery is not reported to the competent institutions in Serbia, very often become the subject of illegal trade. The following questions arise: why would a Roman monument be thrown into a freshly dug ditch and where could it have been brought from?

During the two-week search for the lost monument, one of the authors of this paper found out, through a conversation with the police, that information was circulating among the illegal diggers that during the works on the expansion of the Belgrade Vinča landfill, which were still taking place at that moment, two Roman sites were damaged. Illegal diggers had the intention

[1] Before it was finally transferred to the National Museum of Serbia, the monument was stolen. After a successful operation by the Ministry of Interior of the Republic of Serbia, and in constant coordination with the National Museum of Serbia, the monument was recovered on July 23rd, 2020 in a forest next to the asphalt road to the Rajinovac monastery in Begaljica.

Manuscript received 24th January 2023, accepted 27th September 2023

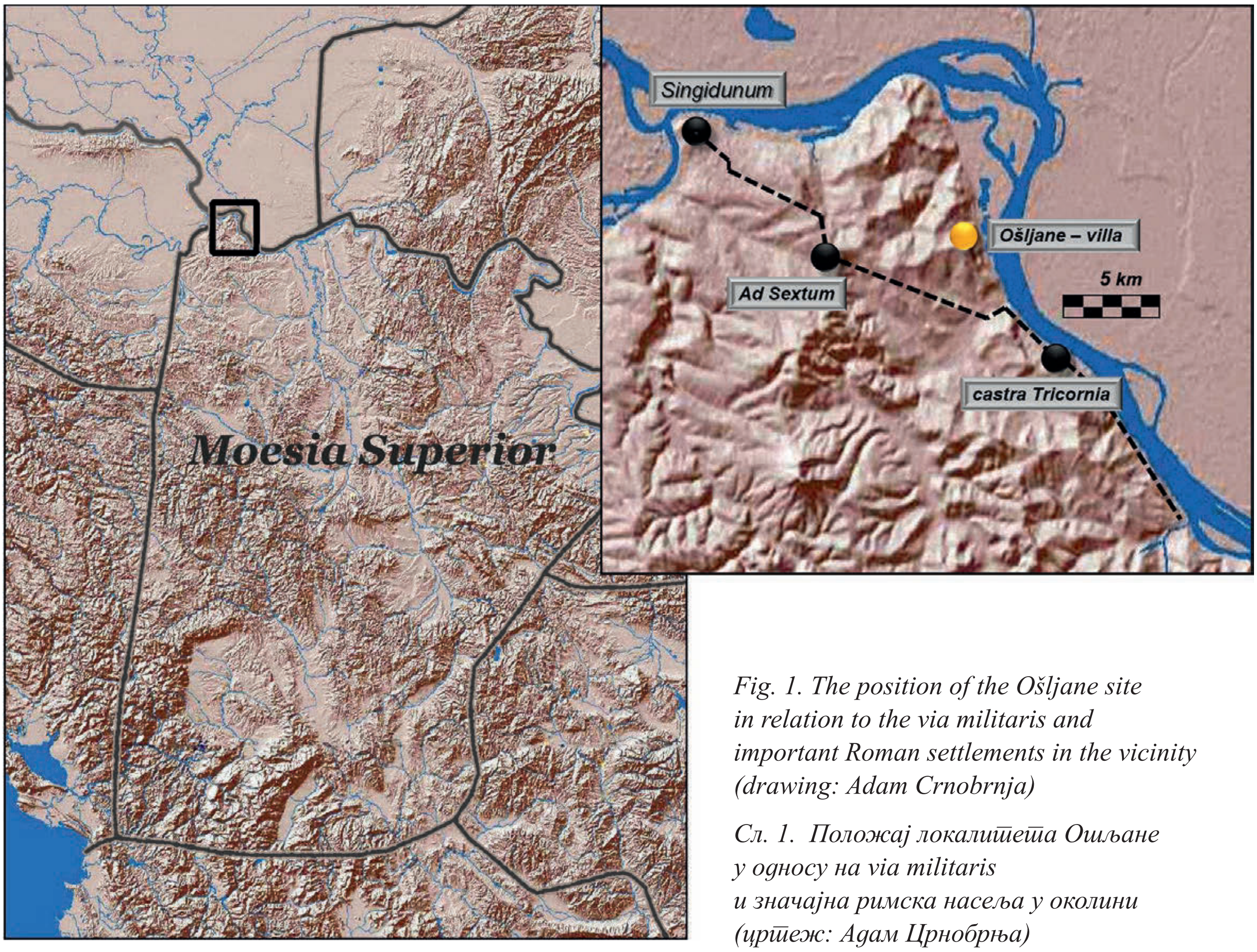


Fig. 1. The position of the Ošljane site in relation to the via militaris and important Roman settlements in the vicinity (drawing: Adam Crnobrnja)

Сл. 1. Положај локалитета Ошљане у односу на via militaris и значајна римска насеља у околини (цртеж: Адам Црнобрња)

of conducting research with metal detectors at these locations, but they did not dare to do so because of the constantly present security at the construction site. If that information is correct, it would mean that the monument was not destroyed by illegal diggers, and this is supported by the fact that the monument was thrown away, which certainly would not have been the goal of the looters.

The location where the monument was found is situated on the road between the construction site and the gate through which one exits the landfill area. Indirect information obtained from individual employees at the landfill, as well as the unofficial statements of workers who were engaged in the works on its expansion, indicate that the discovery was made during the construction works at the landfill site itself. Namely, the monument was found during the excavation for the expansion of the landfill, and then transported and dumped in the first suitable place, so that the works would not be stopped by the services for the protection of cultural assets.

Although the information we received informally may seem unreliable, it largely coincides with publicly available data on the dynamics of works on the expansion of the Vinča landfill, as well as with earlier knowledge regarding the location of the Roman *villa rustica* at the Ošljane site.

According to data known so far, the finds at the Ošljane site were mentioned as early as the beginning of the 20th century,[2] and it was mentioned as a Roman site in the middle of the last century.[3] On that occasion, a series of trial trenches were used to explore a narrow area in the future south-eastern part of the landfill. Since the primary goal was to determine the presence of archaeological content, the trenches were only 1 m wide. In some places, archaeological material from the prehistoric and Roman periods was found. Archaeo-

2 Николић 1903, 995.

3 Гарашанин, Гарашанин 1951, 129; Гарашанин 1954, 93.

4 Bojović 1975, T. XLI.

logical trial trenches were not positioned at the location where there were indications of the existence of a Roman *villa rustica*, because it was located outside the then-planned scope of the landfill. The project manager of the research, Dragoljub Bojović, clearly indicated on the attached plan and photo the area where the remains of Roman buildings were located and where a Roman altar, dated to the 2nd or 3rd century A.D., was accidentally found.[4] Based on the partially preserved inscription [..] X LEG IIII [.], the spacious *villa rustica* was



*Fig. 2. The archaeological site of Ošljane (*villa rustica*) in relation to the Vinča landfill: a) October 2008; b) July 2020 (images taken from Google Earth)*

*Сл. 2. Археолошко налазиште Ошљане (*villa rustica*) у односу на депонију Винча: a) октобар 2008; b) јул 2020. (преузето: Google Earth)*

labelled as a veteran villa.[5] Unfortunately, its remains were not explored in 1975, because the work was stopped due to the opposition of the landowner.[6] The *villa rustica* was located in the fertile valley of the Ošljanski stream, along the once marshy bank of the Danube, about 3 km northeast of the Roman Singidunum–Viminacium road, i.e. about 7 km upstream of *castra Tricornia* (Fig. 1). In 2020, the expansion of the Vinča landfill included the area that was designated in 1975 as the location where the remains of the Roman villa were situated (Fig. 2). If our assumption that the monument was found during earthworks on the expansion of the Vinča landfill in 2020 is correct, it also means that the archaeological site is now largely devastated and unavailable for further research.

Description of the monument

The monument in the form of a marble plaque, rectangular in shape (dim. 90 x 50 x 10–18 cm), is now stored in the Collection of Ancient and Medieval Epigraphic and Anepigraphic Monuments of the National Museum of Serbia, inv. no. 169. The inscription is carved on the bottom of the reused base of a statue (Fig. 3a–b). On the opposite side of the inscription are preserved the lower segments of a male statue, consisting of two feet (length 35 cm) in sandals. The top surface of the left foot is damaged, to the right of the right foot is depicted a helmet (dim. 20 x 20 x 35 cm) with paragnathides (visible to the right), to the left of the left foot are the remains of an indiscernible representation and on the base is carved a fringe-like decoration (Fig. 4a–d). The preserved parts of the male sculpture and the base are carved out of one single stone block. There are open toe sandals on the right and partially on the left foot. The sandals are made of intertwined straps wrapping around the upper parts of the feet. Two vertical straps reach up to the ankle of the right foot (to the right are the visible remains of the tying laces) and there are two horizontal straps placed above the toes, which are depicted in detail.

There are four recesses on the top surface of the pedestal – to the right in front of the right foot (dim. 4 x 4 x 3 cm) and behind it (dim. 3.5 x 5 x 3.5 cm), to the left of the left foot (dim. 4 x 4.5 x 3.1 cm) and one (dim. 4 x 4 cm), filled with pure lead[7], behind the left foot. All sides of the monument are roughly cut. There are visible traces of subsequent working for a new purpose (probably as building material?) resulting in the damaged text on the left and right sides of the inscription and the carved grooves (fig. 5). Two, 3 cm wide, grooves are carved in front and behind the right foot, on the sides of the base.[8]

The inscription

The inscription consists of sixteen partially preserved lines. Letter heights: 7 cm in line 1; 6 cm in line 2; 3 cm in lines 3–15; E at the end of line 2, before S, 2.5 cm; A at the end of lines 5 and 7 (before the fragment of the C) and I at the end of line 9 – 1.8 cm. Triangular separation marks are visible between the words in all the lines.

The letter M in the first line measures 8 cm in width. Since the nomen Ulpius was probably preceded by the abbreviated praenomen *M(arcus)*, one can presume that approximately 8 cm is missing on the left side. The possibility that the first two lines, with larger letters, were longer than the following ones should be taken into account. The preserved text is as follows:

[ ]ṾLP · M · FIL · QVIR
[ ]C̣ERIALID · LAVREṢ
[ ]+CENT · DAC · APVL · PRAEF
[ ]I · VLP · CONT · PRAEF · ALAE
[ ]ṾACOR · PRAEF · ALAE · SABA
[ ]N MAVRET · TRIB · MIL · LEG
[ ]Ỵ REN · PRAEF · COH · I · THRAC̣
[ ]PPAD · PRAEP · VEXILLATIOṆ
[ ]I · FVLM · ET · XV APOLL · ET · VEXI
[ ]Ṇ · HISP · IN · BELLO PARTHIC
[ ]Ḍ VOB · IMPP · ANTONINỌ
[ ]Ị O DONIS · DONAT · COṚ
[ ]Ṃ VRAL · VALLAR · HASTIS
[ ]S · II · ITEM IN EXPEDITION[ ]
[ ]Ṃ AN · SVB ANTONINO E[ ]
[ ]ỌḌỌ[ ]++[ ]+++Ṣ[ ]
[

Ligatures: VIR in line 1; LAVR in line 2; HR in line 7; TI in line 8; NI in line 12; DI and TI in line 14.

---

[5] Bojović 1975, 85–86.

[6] Bojović 1975, 86, n. 1.

[7] Analyses of the contents extracted from this recess were performed using the technique of energy dispersive X-ray fluorescence spectroscopy (EDXRF), on apparatus consisting of a 50 kV X-ray mini tube AMPTEK, an X-ray detector SSD-123 AMPTEK and laser pointer for recording the site of measurement, with a diameter of 2 mm. Recording conditions were voltage 40 keV, current 10 µA and recording time 100 s. The analyses were carried out by Milica Marić Stojanović, chemist (National Museum of Serbia).

[8] The analyses of the remains of the male statue will be the subject of a separate paper.





Fig. 3. The inscription on the monument (a) and left lateral side of the monument (b) (photo: Documentation of the National Museum of Serbia)

Сл. 3. Натпис на споменику (а) и лева бочна страна споменика (b) (фото: Документација Народног музеја Србије)

Bearing in mind all the difficulties concerning the length and division of the lines, we propose the following reading:

[M.] Ulp(ius) M. fil(ius) Quir(ina) / [- - - pr(aetor)?] Cerial(is?) i(ure?) d(icundo?), Laure(n)s (!) / [L(avinas ?), pro]c(urator) cent(enarius) Dac(iae) Apul(ensis), praef(ectus) / [alae] I Ulp(iae) cont(ariorum), praef(ectus) alae /[5] [± 2 Ara]vacor(um), praef(ectus) alae Saba/[sten(orum) i]n Mauret(ania), trib(unus) mil(itum) leg(ionis) / [III C]yren(aicae), praef(ectus) coh(ortis) I Thrac(um) / [in Ca]ppad(ocia), praep(ositus) vexillation(ibus) / [leg(ionum) XI]I Fulm(inatae) et XV Apoll(inaris) et vexi(llatione) /[10] [± 4 i]n Hisp(anias), in bello Parthic(o) / [ab] duob(us) Impp(eratoribus) Antonino / [et Ver]io (!) donis donat(us) cor(ona) / [aur(ea) ?] mural(i) vallar(i) hastis / [± 4]s II item in expedition[e] /[15] [Ger]man(ica) sub Antonino e[t] / [Comm]odo [- - -]++[- - -]++++S[.] / [- - -.

The inscription records certain phases of the career of an equestrian who is not noted in H. Devijver's *Prosopographia militiarum equestrium quae fuerunt ab Augusto ad Gallienum* or H.-G. Pflaum's *Les carrières procuratoriennes équestres sous le Haut-Empire romain*. His name is not entirely preserved. We only know that he bore the imperial nomen *Ulpius*. The chronological frame for the dating of the inscription and Ulpius' career to the second half of the 2nd century AD is provided by the mention of two wars waged under Marcus Aurelius. The first one is the Parthian campaign of Lucius Verus (162–166 AD) and the other is the latter phase of the Marcomannic wars (178–180 AD). The

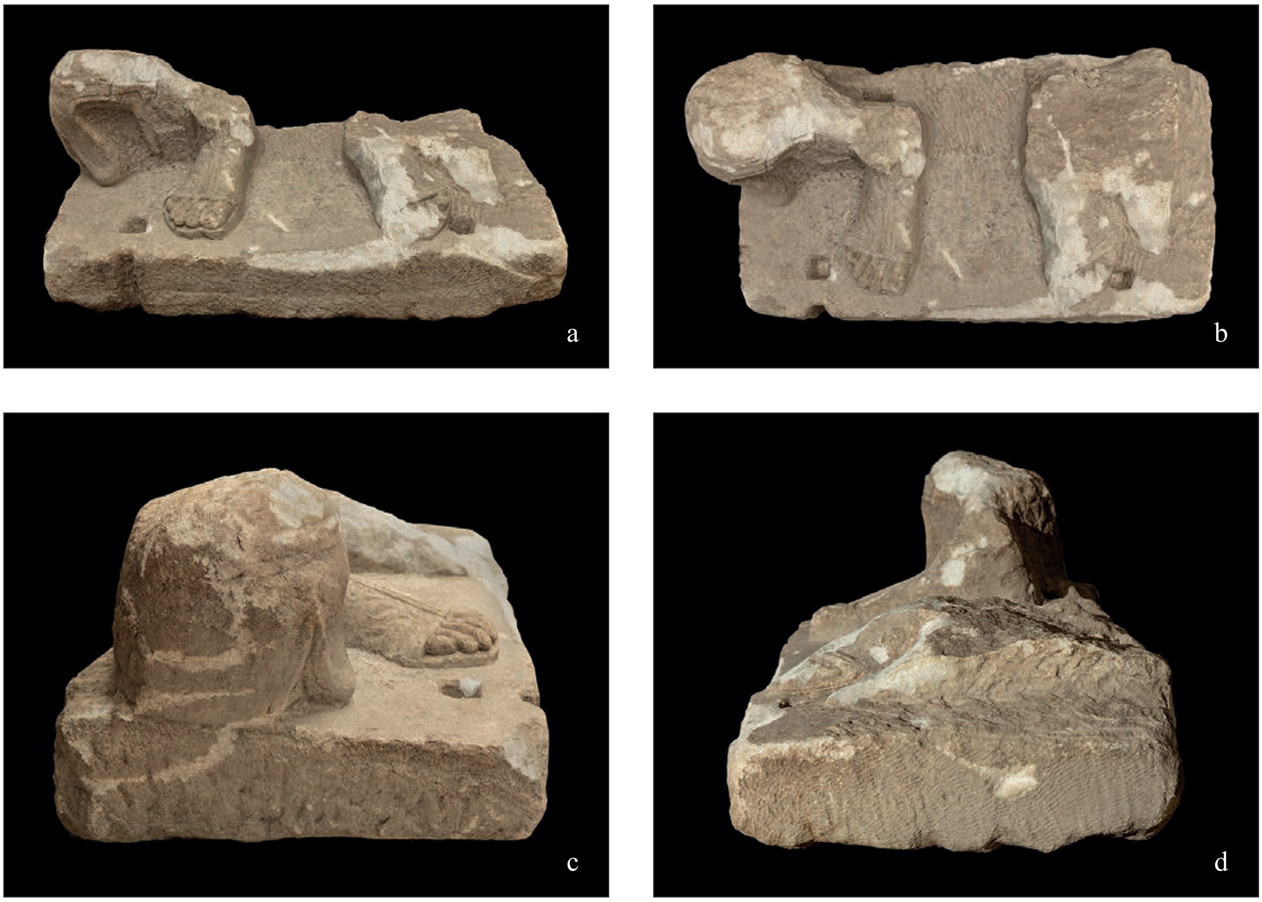


Fig. 4a–d. Preserved parts of the sculpture (photo: Documentation of the National Museum of Serbia)

Сл. 4a–d. Очувани делови скулптуре (фото: Документација Народног музеја Србије)

mention of the *bellum Parthicum* in line 10 is followed by the names of the two emperors who have awarded military decorations to Ulpius. Since the name of the first was *Antoninus*, the other one must be Lucius Verus. Marcus Aurelius and his co-ruler were the only two Augusti during whose joint rule the Romans waged war against the Parthians. The inscription from Vinča presents a particular problem concerning the reading of the emperors' names. One would expect that *Antonino* at the end of line 11 would be followed by *Vero* in line 12, as is the case in the inscription of Lucius Iulius Vehilius Gallus Iulianus. He was decorated for the victory in the Parthian war and the names of Marcus Aurelius and Lucius Verus are given as *Antonino et Vero*.[9] In the inscription from Vinča, however, the name of the second emperor ends in *–io* in ablative case. The letters I and O are clearly visible at the beginning of line 12. Perhaps the stonecutter made a mistake and incised *Verio* instead of *Vero*? The term *expeditio Germanica* in lines 14 and 15 denotes the second stage of the Marcomannic wars waged by Marcus Aurelius and his son Commodus (178–180 AD). In the famous inscription recording the career of Marcus Valerius Maximianus, consul in 185 AD, from Diana Veteranorum in Africa Proconsularis, this phase is styled *expeditio secunda Germanica*.[10]

Judging by the nomen *Ulpius* and the father's praenomen *Marcus*, the family of our equestrian received Roman citizenship from Trajan. The group *QVIR*, at the end of line 1, could be interpreted in two ways – as the abbreviated name of the voting tribe *Quir(ina)* or as the beginning of a cognomen. If we accept the first possibility, Ulpius' cognomen must have been a short

[9] *CIL* VI 41271 = 31856 + p. 3811 = *ILS* 1327 = *IDRE* I 18 = Lőrincz 2001, 278, no. 409.

[10] Lőrincz 2001, 188–189, no. 100.



Fig. 5. Traces of subsequent processing of the marble block (photo: Documentation of the National Museum of Serbia)

Сл. 5. Трагови накнадне обраде мермерног блока (фото: Документација Народног музеја Србије)

one. Although the interpretation of the letters *QVIR* as *Quir(ina tribu)* seems logical, one should not completely discard the slight possibility that the group is actually the beginning of the Latin cognomen *Quirinus* or *Quirinalis*.[11]

The reading of line 2 of Ulpius' inscription presents certain difficulties. The sequence CERIALIDLAVRES is difficult to interpret. *Ceriali* could be the cognomen *Cerialis* in dative case,[12] and the following D might stand for *d(omo)*. In that case, *Laure(n)s* would be the *origo*. If we accept this interpretation, Ulpius hailed from the city of Lavinium in Latium. Its inhabitants were often styled *Laurentes Lavinates* and its territory was called *ager Laurens* or *Laurentinus*.[13] However, we would suggest an alternative reading of the second line of Ulpius' inscription. The sequence CERIALID might be interpreted as *Cerial(is) i(ure) d(icundo)*. The lack of a separation mark between CERIAL and I presents no problem, because the *hederae* are also missing in lines 10 (between *bello* and *Parthico*), 14 (between *item*, *in* and *expeditione*) and 15 (between *sub Antonino* and *e[t]*). If the proposed interpretation is correct, Ulpius held the post of *praetor Cerialis iure dicundo*. The title is attested only in Beneventum in Italy. Four inscriptions record it as *praetor Cerialis iure dicundo quinquennalis*;[14] the simpler

[11] Kajanto 1965, 184 (*Quirinalis*), 216 (*Quirinus*); Solin, Salomies 1994, 389. For the frequency of the names in northern Italy and the western provinces see: *OPEL* IV 20.

[12] Kajanto 1965, 211 = 221; Solin, Salolmies 1994, 313. It should be noted that a certain Marcus Ulpius Cerialis is attested as *proc(urator) Augg(ustorum)* on inscriptions from Leptis Magna in Africa Proconsularis, dated between December 10, 197 AD and December 9, 198 AD (cf. Pflaum 1960, 656 and n. 2).

[13] Philipp 1924, 1007–1008.

[14] *CIL* IX 1599 + 1640 = *ILS* 6494 = *AE* 2010, 357; *CIL* IX 1641 = *ILS* 6495; *CIL* IX 1655 = *ILS* 6496; *AE* 1914, 164.

form – *praetor Cerialis iure dicundo* – is attested only once.[15] *Praetores Ceriales* were considered supreme magistrates in the colony of Beneventum. They replaced the *duoviri* late in the Severan period but not after the reign of Severus Alexander.[16] According to G. Guadagno, however, *praetura Cerialis* should not be regarded as the supreme magistracy of Beneventum. The inscriptions of Caius Caelius Bassaeus Donatus[17] and Caius Caelius Bassaeus Proclius Faustinus[18] clearly show that the two brothers entered the *ordo decurionum* of Beneventum and obtained the rank of *equites Romani* after the *praetura Cerialis*. Consequently, *praetura Cerialis* should be regarded as an extraordinary local magistracy in Beneventum, held by young men of notable families before their enrolment into the *ordo decurionum*.[19] If Ulpius held the post of *praetor Cerialis iure dicundo*, it seems logical to presume that he hailed from Beneventum. His tribe *Quirina*, however, is not attested in the town. Its citizens belonged to *Stellatina*,[20] while some *equites Romani* were inscribed in the urban tribe *Palatina*.[21]

Ulpius' career presumably started with the post of *praetor Cerialis iure dicundo* in Beneventum. In that case, *Laure(n)s* at the end of line 2 of his inscription should be understood as the priestly title. Ulpius obtained equestrian status after the *praetura* and served as *sacerdos Laurens Lavinas*. This priesthood was held by members of the equestrian order since the reign of Augustus.[22]

The equestrian career of of Ulpius followed a well-established pattern. The cursus started with the command over a *cohors quingenaria* or *cohors voluntariorum* or *ingenuorum civium Romanorum*. Next came the tribunate in a legion or a *cohors milliaria*. Command over an *ala quingenaria* was the third step, and the fourth, command over an *ala milliaria*.[23] Ulpius' *militiae equestres* are recorded in lines 3–8 in inverse order. It appears that his military career started with the command over the *cohors I Thracum* in Cappadocia. It should be noted that this unit is not attested as part of the provincial auxiliary garrison, which consisted of numerous cohorts. Most of them are attested in Cappadocia on early military diplomas (issued in 94,[24] 99,[25] 100[26] and 101[27] AD) and throughout the 2nd and 3rd centuries.[28] A couple of units left the province at some point during the first half of the 2nd century AD. The transfer of the cohort *II Augusta Thracum* to Pannonia Inferior probably occurred during the aftermath of Trajan's Parthian war, perhaps in 123 AD.[29] The cohort *I Apamenorum sagittariorum equitata* was moved to Egypt before 144 AD,[30] and *I Raetorum equitata* to Asia before 148 AD.[31] The cohort *I Thracum* could have replaced one of those units. The possibility that it came to Cappadocia in the last years of Antoninus Pius' reign also seems conceivable. Relations between Rome and Parthia worsened after the accession of Vologaeses IV in 148/149 AD and Hadrian's heir reinforced the Cappadocian garrison with new troops.[32] Ulpius' cohort *I Thracum* could have been among those reinforcements.

Any attempt to identify the Cappadocian regiment seems to be an almost impossible task. It must have been a *cohors quingenaria*, since Ulpius' command over it should be regarded as *militia prima*. Most of the Thracian cohorts bearing the number I are well accounted for in the Roman army of the 2nd century AD. Three regiments garrisoned in the Pannonian provinces. The cohorts *I Thracum civium Romanorum pia fidelis* and *I Thracum Germanica equitata* were in Pannonia Inferior and *I Thracum equitata civium Romanorum* was in Pannonia Superior.[33] Another cohort *I Thracum sagittariorum* garrisoned in Dacia Superior.[34] One or possibly two *cohortes I Thracum* were stationed in Britain.[35] The garrison of Arabia included the cohort *I Augusta Thracum equitata*.[36] One cohort *I Thracum* is

---

[15] *CIL* IX 1637 = *ILS* 6493.

[16] *Diz. ep.* II, 212, s. v. *Cerialis*; De Carlo 2010, 246–247; De Carlo 2013, 280–281.

[17] *CIL* IX 1599 + 1640 = *ILS* 6494 = *AE* 2010, 357.

[18] *CIL* IX 1641 = *ILS* 6495.

[19] Guadagno 2010, 103–105.

[20] Kubitschek 1889, 38–39; Torelli 2002, 134.

[21] De Carlo 2013, 282.

[22] Wissowa 1902, 447–448; Saulnier 1984, 517–533; Scheid, Granino Cecere 1999, 101–104.

[23] For the sequence of *militiae equestres* see: Devijver 1989a, 277; Devijver 1989b, 397–398.

[24] *RGZM* 7 =*AE* 2004, 1920.

[25] Eck, Pangerl 2014, 238–246 = *AE* 2014, 1656.

[26] Eck, Pangerl 2004, 233–241 = *AE* 2004, 1913.

[27] *RGZM* p. 18, ad no. 7; Speidel 2009, 605–606.

[28] For the Cappadocian garrison in general see: Speidel 2009, 595–631.

[29] Speidel 2009, 620, no. 23.

[30] Speidel 2009, 611, no. 1.

[31] Speidel 2009, 619, no. 20.

[32] Speidel 2009, 622.

[33] Lőrincz 2001, 42–43, no. 43–45.

[34] Petolescu 2002, 122–123, no. 58.

[35] Jarrett 1994, 66, no. 51–51 A.

[36] Speidel 1984, 252–253, h; Bowersock 1983, 107.

attested in Egypt in the first decades of the 2nd century AD. It was garrisoned in the fortress of Contra Apollonos in the Thebaid. The precise location of the regiment's *hiberna* is provided by a registration of birth issued on April 25, 127 AD.[37] The same cohort *I Thracum* is probably mentioned on a partially preserved *proskynema* from Talmis, written by a certain Glycon. The title of his regiment in the second line is restored as α´ [Θρ]ακῶν.[38] The inscription from Talmis is undated, but it seems logical to presume that it belongs to approximately the same period as the document from 127 AD. The adduced epigraphic evidence testifies to the presence of a cohort *I Thracum* in Egypt during the first decades of the 2nd century AD. The regiment's subsequent fate and history seem to be unknown. Its name is not recorded on military diplomas for Egypt issued in 157–161,[39] 179[40] and 206 AD.[41] This lack of data suggests that the cohort *I Thracum* had left the province before the middle of the 2nd century AD. Perhaps it was transferred to Cappadocia and should be equated with the regiment mentioned on the inscription from Vinča.

Ulpius' *militia secunda* was the post of military tribune in the legion *III Cyrenaica*, which garrisoned in Bostra in the province of Arabia from the latter part of Trajan's reign.[42] Next came the *militia tertia*, i.e., the prefecture in Mauretania. The name of the regiment is partially preserved at the end of line 5 as *ala Saba[- - -]*. There is no doubt that Ulpius commanded the ala *Pia Gemina Sebastena* or *Sebastenorum*, to cite its full title. This regiment garrisoned in the province of Mauretania Caesariensis. The location of its fort during the 2nd century AD remains unknown. In the 3rd century, however, it was stationed in the fortress at Kherba des Ouled Hellal.[43] The form *Sabastenorum* in its name is already recorded on three inscriptions from Numidia. They pertain to the career of the commander Caius Annius Flavianus.[44]

Ulpius' prefecture in Mauretania Caesariensis was followed by the command over another ala whose name is partially preserved. The letters *VACOR* at the beginning of line 5 must be interpreted as part of the ethnic title *Aravacorum*. Two cavalry regiments raised among the Aravaci or Arevaci come to mind. Ala *I Aravacorum*, i.e., ala *I Hispanorum Aravacorum*, garrisoned in Pannonia from the first years of Vespasian's reign. After the division of the province under Trajan, it belonged to the army of Pannonia Superior. If Ulpius was the prefect of this regiment, he held this post while it was stationed in Celamantia.[45] Ala *II Aravacorum*, i.e., ala *II Hispanorum et Aravacorum*, as it is called in the military diplomas starting with the one issued in 99 AD,[46] garrisoned in Moesia Inferior from Domitian's reign. Its fortress was Carsium on the lower Danube.[47] Both *alae Aravacorum* were, judging by available epigraphic evidence, *quingenariae*, as was the ala *Sebastenorum*. This means that Ulpius belongs to the rather restricted category of equestrian officers who had iterated the *militia tertia*.[48]

The fifth stage of Ulpius' military career was the post of prefect of the ala *I Ulpia contariorum milliaria civium Romanorum*. This command corresponds to the *militia quarta*. Ala *I Ulpia contariorum milliaria civium Romanorum* was raised at the beginning of Trajan's reign. It came to Pannonia Superior after the emperor's Dacian campaigns and after a brief spell in Dacia Superior, where it participated in the war against the Iazyges. Its Pannonian fortress was Arrabona.[49]

It seems that Ulpius' cursus comprised an extraordinary appointment besides the usual and expected posts in a career of an equestrian officer. He had been in charge, as *praepositus*, of detachments of the legions *XII Fulminata* and *XV Apollinaris* and one (or several?) regiment(s) whose title(s) is(are) not preserved in Hispania. We have developed the abbreviation *Hisp( )* as *Hisp(anias)*, following the phrasing attested on the honorary inscription of the praetorian prefect Lucius Iulius Vehilius Gallus Iulianus. He commanded the detachments that fought against the Mauri *in Hispanias*

[37] Bell 1937, 33, ll. 14–15: *Actum castris hib(ernis) coh(ortis) I T(hracum) contra Apollonos poli<m> magna<m> Thebaidis*. On the cohort see: Daris 1988, 764; Speidel 1988, 788, no. 9.

[38] Preisigke 1915, no. 4550. Cf. Daris 1956, 239; Daris 1988, 764; Speidel 1988, 788. Lesquier 1918, 495, no. 21 supposed that the title of the cohort should be restored as α´ [Θηβ]αίων.

[39] *CIL* XVI 184 + *RMD* p. 247.

[40] *RMD* 184.

[41] Eck 2011, 63–77 = *AE* 2012, 1960.

[42] Speidel 1984, 691–697; Gatier 2000, 341–349; Kennedy 2004, 47–48.

[43] Benseddik 1982, 40–42.

[44] *CIL* VIII 17900 = *ILS* 1436; *AE* 1969/1970, 704; 1989, 888. For Flavianus' career see: *PME* A 120; Jarrett 1972, 157–158, no. 17.

[45] Lőrincz 2001, 20, no. 13.

[46] *CIL* XVI 44.

[47] Matei-Popescu 2010, 188–189, no. 9.

[48] For other cases see: Demougin 2000, 132–133; Salomies, Fiema 2009, 121–124.

[49] Eck, Pangerl 2008, 280–281; Lőrincz 2001, 18–19, no. 9.

in 171 AD.[50] Both legions that sent their *vexillationes* to the Iberian peninsula garrisoned in the province of Cappadocia during the 2nd century AD. The headquarters of *XII Fulminata* were in Melitene and those of *XV Apollinaris* in Satala.[51] Ulpius obviously commanded a detachment of another unit or a group of units, as is suggested by *vexi[- - -]* at the end of line 9. Considering the presumed length of the line, the first possibility seems more plausible. Ulpius' extraordinary command in the Hispanic provinces could be dated to ca. 177 AD, when the Mauri raided the southern parts of the Iberian Peninsula for the second time. During the first assault, in 171–172 AD, the *vexillationes* of the legions *XII Fulminata* and *XV Apollinaris* were engaged on the middle Danube, fighting against the Marcomanni and the Quadi.[52] Although the army of Mauretania Tingitana played a crucial role in the suppression of the attack in 177 AD,[53] it seems that detachments of the Cappadocian legions and one other unit also participated in the fighting.[54]

We have already mentioned that Ulpius was decorated for bravery twice in his career: in the Parthian campaign of Lucius Verus (162–166 AD) and in the second phase of the Marcomannic wars (178–180 AD). The exact number and types of decorations awarded in the Parthian war is difficult to determine. Ulpius received at least two crowns (*muralis* and *vallaris*), mentioned in line 13. If, however, the word *corona* at the end of line 12 was recorded as *cor(ona)*, there would have been sufficient space for another award of this type, probably *corona aurea,* and the sequence would be: *cor(ona) aur(ea), mural(is), vallar(is)*. The abbreviated form *cor(ona) aur(ea)* is attested on several inscriptions from Rome, Italy and the provinces.[55] The *hastae* at the end of line 13 also present a problem. Ulpius obviously received more than one *hasta*, but how many and were they followed by the mention of two *vexilla*? Concerning the restoration of the text at the end of line 13 and the beginning of line 14, the most obvious and common solution would be *hastis / [puri]s II*. The expression *hastis puris*, followed by a number, is attested on numerous inscriptions from various parts of the Roman Empire.[56] One should not completely discard the possibility that the word *hastis* was incised without the adjective *puris*. Such is the case on a funerary inscription from Singidunum in Moesia Superior. The decorations of Titus Flavius Victorinus are listed in this way: *hastis faleris (!) corona murali*.[57] If the term *hastis* was not followed by the adjective *puris*, perhaps it was followed by a mention of two *vexilla*? Consequently, the text at the end of line 13 and the beginning of line 14 might be restored as *hastis [ve/xilli]s II* (the division of the lines is purely conjectural). It should be noted that the decorations of one other equestrian officer during the reign of Marcus Aurelius comprised *coronae muralis* and *vallaris*, two *hastae* and two *vexilla*. They were awarded to Marcus Macrinius Avitus Catonius Vindex, prefect of the ala *I Ulpia contariorum*, for services in the first phase of the Marcomannic wars.[58] The number and types of decorations won for bravery in the second phase of the Marcommanic wars remain unknown, since that part of Ulpius' inscription is missing.

The second question related to Ulpius' military decorations pertains to the identity of the units he commanded at the time when they had been awarded to him. Ulpius was obviously an experienced commander when he was put in charge, ca. 177 AD, of the detachments of the legions *XII Fulminata* and *XV Apollinaris* on the Iberian Peninsula. It seems certain that the awarding of decorations during the Parthian war of Marcus Aurelius and Lucius Verus predates this appointment and should be connected to the first stages of his career. Ulpius probably received them while he held the post of prefect of the cohort *I Thracum* in Cappadocia. The Cappadocian army played an important role in the campaign against the Parthians. Led by the provincial legate and experienced general Marcus Statius Priscus Licinius Italicus, it attacked Armenia in 163 AD and stormed the kingdom's capital of Artaxata.[59] It appears conceivable that the cohort *I Thracum*, under Ulpius' command, participated in these events.

---

[50] *CIL* VI 41271 = 31856 + p. 3811 = *ILS* 1327 = *IDRE* I 18 = Lőrincz 2001, 278, no. 409.

[51] Speidel 2009, 601. For *XII Fulminata* in Cappadocia see: Bertrandy, Rémy 2000, 254. For *XV Apollinaris* see: Wheeler 2000, 295–305.

[52] Wheeler 2000, 298–299.

[53] Alföldy 2008, 460.

[54] For the raids by the Mauri on the Iberian provinces at the beginning of Marcus' reign see: Bénabou 1976, 147–154; Alföldy 2008, 460.

[55] *ILS* 967 (Umbria); 1017 + p. 173 (Galatia); 1385 (Rome); 2697 (Germania Superior).

[56] E.g. *ILS* 1098, 1326; *AE* 1920, 45; *AE* 1930, 79; *AE* 1964, 192; *AE* 1979, 601; *AE* 1997, 1482.

[57] *IMS* I 26.

[58] *CIL* VI 1449 + p. 3805, 4700 = *ILS* 1107 = *IDRE* I 17. For the dating and detailed interpretation see: Maxfield 1981, 179–180.

[59] Chaumont 1976, 148–149; Birley 2012, 217–218.

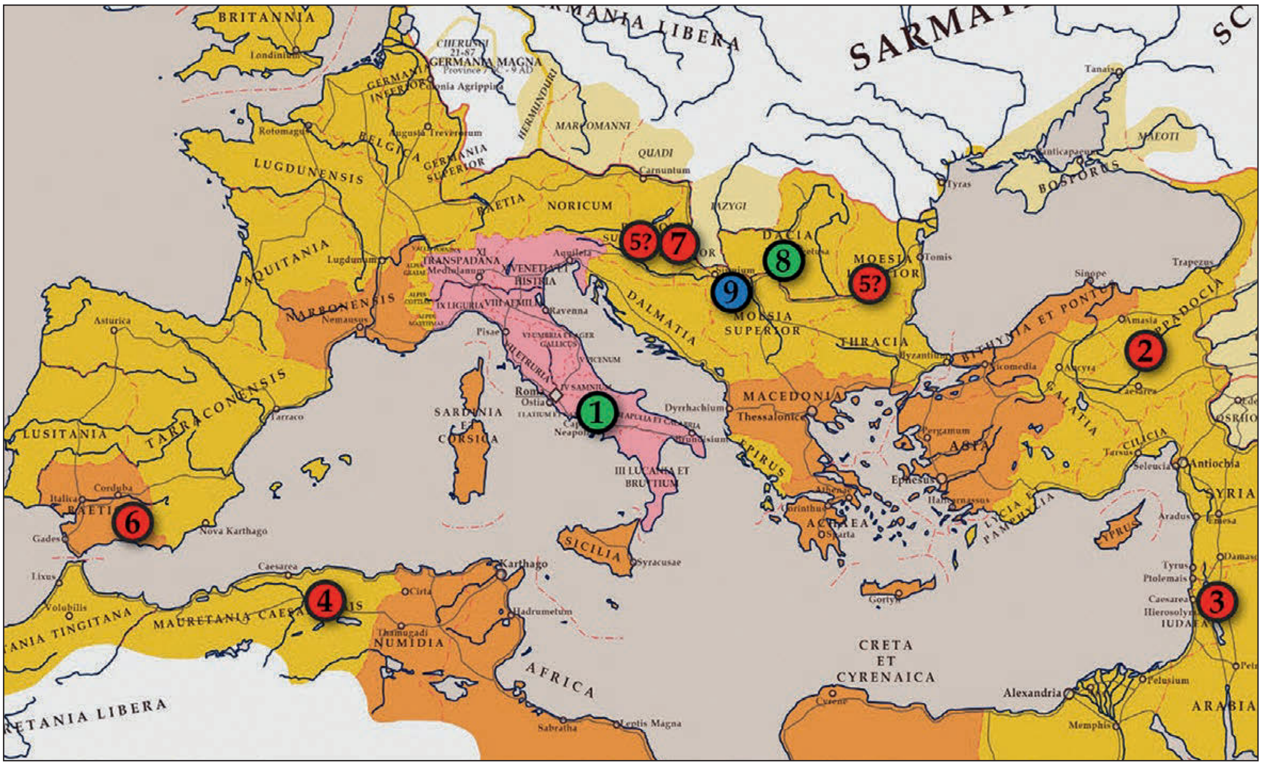


Fig. 6. The career of M. Ulpius:
1) Beneventum (praetor Cerialis iure dicundo); 2) Cappadocia (praefectus cohortis I Thracum); 3) Arabia (tribunus militum legionis III Cyrenaicae); 4) Mauretania Caesariensis (praefectus alae Sebastenorum); 5) Pannonia Superior or Moesia Inferior (praefectus alae I or II Aravacorum); 6) Hispania (praepositus vexillationibus legionum XII Fulminatae et XV Apollinaris); 7) Pannonia Superior (praefectus alae I Ulpiae contariorum); 8) Dacia Apulensis (procurator centenarius); 9) Ošljane, the presumed find place of the monument (drawing: Adam Crnobrnja)

Сл. 6. Каријера М. Улӣија:
1) Беневенӣ (praetor Cerialis iure dicundo); 2) Каӣадокија (praefectus cohortis I Thracum); 3) Арабија (tribunus militum legionis III Cyrenaicae); 4) Цезарејска Мауриӣанија (praefectus alae Sebastenorum); 5) Горња Панонија или Доња Мезија (praefectus alae I or II Aravacorum); 6) Хисӣанија (praepositus vexillationibus legionum XII Fulminatae et XV Apollinaris); 7) Горња Панонија (praefectus alae I Ulpiae contariorum); 8) Дакија Аӣуленсис (procurator centenarius); 9) Ошљане, ӣреӣӣосӣављено месӣо налаза сӣоменика (црӣеж: Адам Црнобрња)

The possibility that Ulpius received the decorations while he was the tribune of the legion *III Cyrenaica* is highly improbable, because there is no proof that the Arabian legion fought in the Parthian expedition of Lucius Verus.[60]

Our conjecture that Ulpius received the decorations for the Parthian war of Marcus Aurelius and Lucius Verus during his command in Cappadocia allows for further chronological speculation concerning his career. Each spell of military service of an equestrian officer lasted about three or four years under normal circumstances.[61] We shall propose a tentative chronological frame for Ulpius' military career. His command over the cohort *I Thracum* in Cappadocia could be dated ca. 162–165 AD and the tribunate in the legion *III Cyrenaica* in Arabia ca. 166/167–168/169 AD. Ulpius' tenure in Mauretania Caesariensis, as prefect of the ala *Sebastenorum*, would have consequently been ca. 170/171–172/173 AD and his command over one of two *alae Aravacorum* (in Pannonia Superior or Moesia Inferior) ca. 174/175–175/177 AD. Next came the extraordinary command on the Iberian Peninsula.

[60] Gatier 2000, 347; Kennedy 2004, 48.

[61] Brunt 1983, 47; Le Bohec 1990, 43; Southern 2006, 129.

In 177 AD he was appointed *praepositus* of the detachments of the Cappadocian legions *XII Fulminata* and *XV Apollinaris* and one other regiment, which fought the Mauri in the Hispanic provinces. It seems conceivable that Ulpius' previous military experience played an important role in this appointment. The last step in his military career – *praefectus alae I Ulpiae contariorum* – might be dated ca. 178/179–180/181 AD. That means that the military decorations for *expeditio Germanica* were awarded to Ulpius during his tenure in Pannonia Superior. The ala *I Ulpia contariorum milliaria civium Romanorum* participated in the second phase of the Marcomannic wars.[62]

After the *militiae equestres*, Ulpius' career continued with the procuratorship in Dacia Apulensis. At the beginning of line 3, a trace of a curved upper stroke is preserved, which probably belonged to a C. That is why we propose the following reading of the title: *[pro]-c(urator) cent(enarius) Dac(iae) Apul(ensis)*. The inscription from Vinča strengthens the view that the financial procurators of Dacia Apulensis were *centenarii*. This conclusion was based on a votive monument from Sarmizegetusa, set up by Lucius Octavius Felix, procurator of Dacia Apulensis, on the occasion of his promotion *ad ducenariam* in the province of Dalmatia.[63]

Ulpius' procuratorship in Dacia Apulensis presents a chronological problem. Assuming that it followed immediately after the completion of *militiae equestres*, it should be dated to the very first years of Commodus' reign. The sequence of procurators from that period comprises two officials. Titus Claudius Xenophon held the post probably in 181–183 AD,[64] and Caius Sempronius Urbanus probably in 184–186 AD.[65] The next known procurator – Quintus Petronius Antonianus – held the office in 195–198 AD.[66] It appears, therefore, that Ulpius' procuratorship in Dacia Apulensis should be dated after 186 AD, possibly to 187–189 AD. This implies a hiatus of five or six years between the completion of *militiae equestres* and his first administrative post. Bearing in mind that equestrian tenures were not necessarily held without intervals,[67] this possibility seems conceivable. We will offer a similar example from the first half of the 2nd century AD. Marcus Aemilius Bassus ended his military career in the latter part of Trajan's reign, possibly ca. 114/115 AD with the prefecture of the ala *Moesica felix torquata* in Germania Inferior. The suggested date is inferred from the fact that he commanded the cohort *I Brittonum milliaria Ulpia torquata civium Romanorum* in Dacia in 110 AD.[68] Bassus received the first procuratorship in the Gallic provinces from Hadrian.[69] Even if he had been appointed at the very beginning of the emperor's reign, this would mean that an interval of several years passed between the completion of *militiae equestres* and his first administrative post. The other solution to the chronological problem concerning Ulpius' procuratorship in Dacia Apulensis would be a slight correction of the sequence of procurators. Considering that the average tenure lasted for about 2 to 3 years,[70] perhaps we might move Xenophon's procuratorship to 182–183 AD, and thus make room for Ulpius, in 181–182 AD.

To sum up. The inscription from Vinča records the career of an *eques Romanus* by the name of Marcus Ulpius (the cognomen is not preserved). Judging by the presumed title of *praetor Cerialis iure dicundo*, he hailed from Beneventum in Italy. Ulpius' military career followed well established patterns. He was prefect of a cohort *I Thracum* in Cappadocia and tribune of the legion *III Cyrenaica* in Arabia. The ensuing stages of his career took him to the western part of the Roman Empire. He commanded the *ala Pia Gemina Sebastenorum* in Mauretania Caesariensis, then probably the ala *I Hispanorum Aravacorum* in Pannonia Superior (although the ala *II Hispanorum et Aravacorum* in Moesia Inferior cannot be completely excluded) and, finally, the ala *I Ulpia contariorum milliaria civium Romanorum* in Pannonia Superior. Ulpius' military experience qualified him for the extraordinary command on the Iberian Peninsula. He led the detachments of the Cappadocian legions *XII Fulminata* and *XV Apollinaris* against the raiding Mauri in 177 AD (Fig. 6). One should note that Ulpius was a highly decorated officer. It appears that he was awarded for his bravery and exploits in the Parthian campaign of Lucius Verus during his tenure in Cappadocia. He obtained a second set of decorations while commanding the ala *I Ulpia contariorum* in the second phase of the Marcommanic wars of Marcus Aurelius. After com-

---

[62] Lőrincz 2001, 19, no. 9.
[63] *IDR* III/2, 225. Cf. Stein 1944, 79; Piso 2013, 187, ad no. 93.
[64] Piso 2013, no. 94 = 126.
[65] Piso 2013, no. 95.
[66] Piso 2013, no. 96.
[67] Brunt 1983, 50.
[68] *CIL* XVI 163.
[69] For Bassus see: PME A 75.
[70] Brunt 1983, 49–50.

pleting the *militiae equestres*, Ulpius held the post of procurator in Dacia Apulensis, presumably during the 180s. This procuratorship is the last piece of information concerning his career. He might have held the post of procurator in Moesia Superior after Dacia Apulensis. This conjecture would explain why the monument recording his cursus was discovered in Vinča, on the territory of Roman Singidunum.

BIBLIOGRAPHY:

Alföldy 2008 – G. Alföldy, Spain, in: *The Cambridge Ancient History XI: The High Empire, A.D. 70–192*, (ed.), A. K. Bowman, P. Garnsey, D. Rathbone, Cambridge 2008, 444–461.

Bell 1937 – H. I. Bell, A Latin Registration of Birth, *Journal of Roman Studies* 27, 1937, 30–36.

Bénabou 1976 – M. Bénabou, *La résistance africaine à la romanisation*, Paris 1976.

Benseddik 1982 – N. Benseddik, *Les troupes auxiliaires de l'armée romaine en Maurétanie Césarienne sous le Haut-Empire*, Alger 1982.

Betrandy, Rémy 2000 – F. Bertrandy, B. Rémy, Legio XII Fulminata, in: *Les légions de Rome sous le Haut-Empire. Actes du Congrès de Lyon (17–19 septembre 1998)*, (ed.) Y. Le Bohec, Lyon 2000, 253–257.

Birley 2012 – A. R. Birley, The Wars and Revolts, in: *A Companion to Marcus Aurelius*, (ed.) M. van Ackeren, Malden – Oxford – Chichester 2012, 217–233.

Bojović 1975 – D. Bojović, Vinča, Ošljane – veteranska vila, *Arheološki pregled* 17, 1975, 84–86.

Bowersock 1983 – G. W. Bowersock, *Roman Arabia*, Cambridge Mass. – London 1983.

Brunt 1983 – P. A. Brunt, Princeps and equites, *Journal of Roman Studies* 73, 1983, 41–75.

Chaumont 1976 – M.-L. Chaumont, L'Arménie entre Rome et l'Iran I. De l'avènement d'Auguste à l'avènement de Dioclétien, in: *Aufstieg und Niedergang der römischen Welt. Geschichte und Kultur Roms im Spiegel der neueren Forschung* II 9. 1, (ed.) H. Temporini, W. Haase, Berlin – New York 1976, 71–194.

Daris 1956 – S. Daris, Note per la storia dell'esercito romano in Egitto, *Aegyptus* 36, 1956, 235–246.

Daris 1988 – S. Daris, Le truppe ausiliarie romane in Egitto, in: *Aufstieg und Niedergang der römischen Welt. Geschichte und Kultur Roms im Spiegel der neueren Forschung* II. 10. 1, (ed.) W. Haase, H. Temporini, Berlin – New York 1988, 743–766.

De Carlo 2010 = A. De Carlo, Novità sul cavaliere beneventano di III sec. C. Caelius C. f. St. Bassaeus Donatus Verzobius. Rilettura di CIL IX 1640 + 1599, *Zeitschrift für Papyrologie und Epigraphik* 174, 2010, 243–247.

De Carlo 2013 = Il *ceto equestre* di Beneventum romana, in: *Antiqua Beneventana. La storia della città romana attraverso la documentazione epigrafica*, (ed.) P. Caruso, Benevento 2013, 263–315.

Demougin 2000 – S. Demougin, Iteratio Militiae, in: *Kaiser, Heer und Gesellschaft in der Römischen Kaiserzeit. Gedenkschrift für Eric Birley*, Stuttgart 2000, 121–138.

Devijver 1989a – H. Devijver, Equestrian Officers from the East, in: *The Equestrian Officers of the Roman Imperial Army*, (ed.) M. P. Speidel, Amsterdam 1989, 273–389 (= *The Defence of the Roman and Byzantine East. Proceedings of a colloquium held at the University of Sheffield in April 1986*, (ed.) Ph. Freeman, D. Kennedy, Oxford 1986, 109–225).

Devijver 1989b – H. Devijver, La *Prosopographia militiarum equestrium.* Contribution à l'histoire sociale et économique du Principat, in: *The Equestrian Officers of the Roman Imperial Army*, (ed.) M. P Speidel, Amsterdam 1989, 396–411 (= *Histoire économique de l'Antiquité*, (ed.) T. Hackens, P. Marchetti, Louvain-la-Neuve 1989, 107–122).

Eck 2011 – W. Eck, Septimius Severus und die Soldaten. Das Problem der Soldatenehe und ein neues Auxiliardiplom, in: *In omni historia curiosus. Studien zur Geschichte von der Antike bis zur Neuzeit. Festschrift für Helmuth Schneider zum 65. Geburtstag*, (ed.) B. Onken, D. Rohde, Wiesbaden 2011, 63–77.

Eck, Pangerl 2004 – W. Eck, A. Pangerl, Eine Bürgerrechtskonstitution für zwei Veteranen des kappadokischen Heeres, *Zeitschrift für Papyrologie und Epigraphik* 150, 2004, 233–241.

Eck, Pangerl 2008 – W. Eck, A. Pangerl, „Vater, Mutter, Schwestern, Brüder…": 3. Akt, *Zeitschrift für Papyrologie und Epigraphik* 166, 2008, 276–284.

Eck, Pangerl 2014 – W. Eck, A. Pangerl, Das vierte Diplom für die Provinz Galatia et Cappadocia, ausgestellt im Jahr 99, *Zeitschrift für Papyrologie und Epigraphik* 192, 2014, 238–246.

Гарашанин 1954 – Д. Гарашанин, Археолошки споменици у Београду и околини, *Годишњак музеја града Београда* I, 1954, 45–98 (Garašanin 1954 – D. Garašanin, Arheološki spomenici u Beogradu i okolini, *Godišnjak muzeja grada Beograda* I, 1954, 45–98).

Гарашанин, Гарашанин 1951 – Д. Гарашанин, М. Гарашанин, *Археолошка налазишта у Србији*, Београд 1951 (Garašanin, Garašanin 1951 – D. Garašanin, M. Garašanin, *Arheološka nalazišta u Srbiji*, Beograd 1951).

Gatier 2000 – P. – L. Gatier, *La* legio III Cyrenaica *et l'Arabie*, in: *Les légions de Rome sous le Haut-Empire. Actes du Congrès de Lyon (17–19 septembre 1998)*, (ed.) Y. Le Bohec, Lyon 2000, 341–349.

Guadagno 2010 – G. Guadagno, *Minerva Paracentia* e *Ceres*: persistenza ed assimilazione di culti preromani nella *Beneventum* romana, *Epigraphica* 72, 2010, 91–110.

Jarrett 1972 – M. G. Jarrett, An Album of Equestrians from North Africa in the Emperor's Service, *Epigraphische Studien* 9, 1972, 146–232.

Jarrett 1994 – M. G. Jarrett, Non-Legionary Troops in Roman Britain: Part One, the Units, *Britannia* 25, 1994, 35–77.

Kajanto 1965 – I. Kajanto, *The Latin Cognomina*, Helsinki 1965.

Kennedy 2004 – D. Kennedy, *The Roman Army in Jordan*, London 2004.

Kubitschek 1889 – J. W. Kubitschek, *Imperium Romanum tributim discriptum*, Pragae – Vindobonae – Lipsiae 1889.

Le Bohec 1990 – Y. Le Bohec, *L'armée romaine sous le Haut-Empire*, Paris 1990.

Lesquier 1918 – J. Lesquier, L'armée romaine d'Égypte d'Auguste à Dioclétien, Cairo 1918.

Lőrincz 2001 – B. Lőrincz, *Die römischen Hilfstruppen in Pannonien während der Prinzipatszeit. Teil I: Die Inschriften*, Wien 2001.

Matei-Popescu 2010 – F. Matei-Popescu, *The Roman Army in Moesia Inferior*, Bucureşti 2010.

Maxfield 1981 – V. A. Maxfield, The Military Decorations of the Roman Army, London 1981.

Николић 1903 – Р. Т. Николић, Околина Београда: антропогеографска испитивања, у: *Насеља срйских земаља* V, Српска краљевска академија, Београд 1903, 903–1104 (Nikolić 1903 – R. T. Nikolić, Okolina Beograda: antropogeografska ispitivanja, u: Naselja srpskih zemalja V, Srpska kraljevska akademija, Beograd 1903, 903–1104).

Petolescu 2002 – C. C. Petolescu, *Auxilia Daciae. Contribuţie la istoria militară a Daciei romane*, Bucureşti 2002.

Pflaum 1960 – H.-G. Pflaum, *Les carrières procuratoriennes équestres sous le Haut-Empire romain* II, Paris 1960.

Philipp 1924 – Philipp, Lavinium, in: *RE* XII, 1007–1912.

Piso 2013 – I. Piso, *Fasti provinciae Daciae II. Die ritterlichen Amtsträger*, Bonn 2013.

Preisigke 1915 – F. Preisigke, *Sammelbuch Griechischer Urkunden aus Ägypten* I, Straßburg 1915.

Salomies, Fiema 2009 – O. Salomies, Z. Fiema, Latin Inscription from the Ridge Church at Petra, *Arctos. Acta Philologica Fennica* 43, 2009, 117–140.

Saulnier 1984 – C. Saulnier, Laurens Lavinas: Quelques remarques à propos d'un sacerdoce équestre à Rome, *Latomus* 43, 1984, 517–533.

Scheid, Granino Cecere 1999 – J. Scheid, M. G. Granino Cecere, Les sacerdoces publics équestres, in: *L'ordre équestre. Histoire d'une aristocratie (IIe siècle av. J.-C. – IIIe siècle ap. J.-C.). Actes du colloque international de Bruxelles–Leuven, 5–7 octobre 1995*, (eds.), S. Demougin, H. Devijver, M.-T. Raepsaet-Charlier, Roma 1999, 79–189.

Solin, Salomies 1994 – H. Solin, O. Salomies, *Repertorium nominum gentilium et cognominum Latinorum*, Hildesheim–Zürich – New York 1994².

Southern 2006 – P. Southern, *The Roman Army. A Social and Institutional History*, Santa Barbara – Denver – Oxford 2006.

Speidel 2009 – M. A. Speidel, The development of the Roman forces in northeastern Anatolia. New evidence for the history of the *exercitus Cappadocicus*, in: *Heer und Herrschaft im Römischen Reich der Hohen Kaiserzeit*, (ed.) M. P. Speidel, Stuttgart 2009, 595–631 (= *The Late Roman Army in the Near East from Diocletian to the Arab Conquest. Proceedings of a colloquium held at Potenza, Acerenza and Matera, Italy (May 2005)*, Oxford 2007, 73–90).

Speidel 1984 – M. Speidel, The Roman Army in Arabia, in: *Roman Army Studies I*, Amsterdam 1984, 229–272 (= *Aufstieg und Niedergang der römischen Welt. Geschichte und Kultur Roms im Spiegel der neueren Forschung* II. 8, (ed.) H. Temporini, W. Haase, Berlin – New York 1978, 687–729).

Speidel 1988 – M. P. Speidel, Nubia's Roman Garrison, in: *Aufstieg und Niedergang der römischen Welt. Geschichte und Kultur Roms im Spiegel der neueren Forschung* II. 10. 1, (ed.) W. Haase, H. Temporini, Berlin – New York 1988, 767–798.

Stein 1944 – A. Stein, *Die Reichsbeamten von Dazien*, Budapest 1944.

Torelli 2002 – M. R. Torelli, *Benevento romana*, Roma 2002.

Wheeler 2000 – E. L. Wheeler, Legio XV Apolinaris: From Carnuntum to Satala – and beyond, in: *Les légions de Rome sous le Haut-Empire. Actes du Congrès de Lyon (17–19 septembre 1998)*, (ed.) Y. Le Bohec, Lyon 2000, 259–308.

Wissowa 1902 – G. Wissowa, *Religion und Kultus der Römer*, München 1902.

Резиме: АДАМ ЦРНОБРЊА, Народни музеј Србије, Београд
СНЕЖАНА ФЕРЈАНЧИЋ, Универзитет у Београду, Филозофски факултет, Одељење за историју, Београд
ВЕСЕЛИНКА НИНКОВИЋ, Народни музеј Србије, Београд

НОВИ ЛАТИНСКИ НАТПИС ИЗ ВИНЧЕ У БЕОГРАДУ

Кључне речи. – римски почасни натпис, Београд, Винча, Ошљане, вила рустика, друга половина 2. века, *militiae equestres*, прокуратор

Током извођења инфраструктурних радова поред друма који од улице Смедеревски пут води ка Београдској депонији „Винчи", 10. јула 2020. године случајно је пронађена база статуе са латинским натписом. Споменик је непосредно након открића био украден, али је захваљујући успешној акцији МУП Републике Србије убрзо пронађен и пренет у Народни музеј Србије. На основу детаљног прегледа терена који су спровели археолози Народног музеја Србије установљено је да није откривен *in situ*, као и да у земљи око њега није било покретних налаза. Информације добијене неформалним путем указују да је споменик откривен приликом проширења депоније, а затим одвезен и бачен на првом згодном месту како службе за заштиту културних добара не би зауставиле радове. На основу података о темпу радова на проширењу Депоније „Винча" и резултата заштитних археолошких истраживања из седамдесетих година прошлог века, готово је сигурно да је споменик нађен на локалитету Ошљане на рубу депоније (сл. 2). На том месту су лежали остаци римске сеоске виле (*villa rustica*). Она се налазила уз некада мочварну обалу Дунава, на око 3 км североисточно од римског пута Сингидунум–Виминацијум, односно око 7 км узводно од утврђења Трикорнијум (сл. 1).

Споменик је у облику плоче (дим. 90 x 50 x 10–18 цм), правоугаоног облика. Натпис је уклесан на доњој страни секундарно употребљене базе мушке статуе (сл. 3a–b). Од скулптуре су сачувана два стопала у сандалама (горња површина левог стопала је оштећена) и шлем са десном парагнатидом, десно од десног стопала; лево од левог стопала налазе се остаци нејасне представе, а на бази је уклесан украс налик ресама (сл. 4a–d, 5). Сачувани делови мушке скулптуре и њена база исклесани су из једног каменог блока. На десном и делимично на левом стопалу налазе се сандале са отвореним прстима који су обрађени до детаља. На горњој површини постамента налазе се четири удубљења: испред десног стопала, са десне стране (дим. 4 x 4 x3 цм) и иза њега (дим. 3,5 x 5 x 3,5 цм), испред левог стопала, са леве стране (дим. 4 x 4,5 x 3,1 цм) и једно (дим. 4 x 4 цм), испуњено чистим оловом, иза левог стопала. На споменику су видљиви трагови накнадне обраде ради нове намене (вероватно као грађевинског материјала?), при чему је натпис оштећен и уклесани су жлебови (сл. 5).

Натпис, који се састоји из шеснаест делимично сачуваних редова, бележи одређене кораке у каријери једног припадника римског витешког сталежа (*ordo equester*) из друге половине 2. века (сл. 6). Од његовог имена сачуван је само номен Улпије, а знамо и да је био уписан у трибу *Quirina*. Изгледа да је на почетку каријере био *praetor Cerialis iure dicundo*. Реч је о локалној магистратури у Беневенту у Италији, коју су вршили младићи из угледних породица пре него што би били уврштени у градски савет (*ordo decurionum*) и витешки сталеж. Уколико је Улпије заиста био *praetor Cerialis iure dicundo*, треба претпоставити да је био рођен у Беневенту. После претуре је уврштен у витешки сталеж и добио је свештеничко звање *sacerdos Laurens Lavinas*. Потом је служио као официр у римској војсци и прошао је све *militiae equestres*. Најпре је заповедао кохортом *I Thracum* у Кападокији (око 162–165. године). Ова јединица, до сада није посведочена у поменутој провинцији, могла би се идентификовати са кохортом *I Thracum*, која је у првим деценијама 2. века била стационирана у Египту. Уколико је наша претпоставка тачна, у Кападокију је вероватно прекомандована пре средине поменутог столећа. Изгледа да је Улпије први пут одликован док је био стациониран у Кападокији. Јединице провинцијског гарнизона играле су значајну улогу у походу Луција Вера против Партије (162–166. године). У борбама је лако могла учествовати и кохорта *I Thracum*. Број и врсту одликовања које су Улпију доделили Марко Аурелије и Луције Вер није могуће прецизно утврдити. Свакако је добио две короне (*corona muralis* и *corona vallaris*) и одређен број хасти (*hastae*). Улпије је из Кападокије прекомандован у Арабију, где је служио као војни трибун легије *III Cyrenaica* (око 166/167–168/169. године). То би била његова *militia secunda*. Потом следи заповедништво над двема алама. Улпије је био префект але *Pia Gemina Sebastena* или *Sebastenorum* у Цезарејској Мауританији (око 170/171–172/173. године). Затим је командовао одредом чији назив није у потпуности сачуван (174/175–175/176. године). Можда је реч о али *I Hispanorum Aravacorum*, која је била део гарнизона Горње Паноније. У обзир долази и ала *II Hispanorum et Aravacorum*, стационирана у Доњој Мезији. Све три поменуте јединице биле су *alae quingenariae*, што значи да је Улпије припадао релативно уском кругу људи који су два пута поновили трећи корак у војничкој каријери припадника витешког сталежа (*militia tertia*). Искуство стечено током службовања у Кападокији, Арабији, Цезарејској Мауританији и Горњој Панонији или Доњој Мезији, донело је нашем официру једно ванредно наименовање. Око 177. године је постављен за заповедника (*praepositus*) вексилација кападокијских легија *XII Fulminata* и *XV Apollinaris* у Хиспанији. Оне су, заједно са

главнином гарнизона Тингитанске Мауританије, учествовале у борби против Маура који су пљачкали провинције на Иберијском полуострву. Улпијева *militia quarta* била је префектура у али *I Ulpia contariorum milliaria civium Romanorum*, у Горњој Панонији (око 178/179–180/181. године). Ова јединица учествовала је у другој фази маркоманских ратова Марка Аурелија. Улпије је у току тих операција по други пут одликован. Нажалост, није познато која одликовања су му доделили Марко Аурелије и Комод. Пошто је прошао све *militiae equestres*, Улпије је наставио цивилну каријеру. Био је *procurator centenarius* Дакије Апулензис, што је уједно и последњи забележен корак његовог курсуса. Ову дужност је вероватно вршио после 186. године, можда од 187. до 189. године. Улпијев натпис је значајан за познавање римске администрације у дачким провинцијама. Он потврђује претпоставку модерних истраживача да су прокуратори Дакије Апулензис припадали категорији центенарија (*centenarii*).

UDC: 902.2:572.781.08(497.11)
904:726.8"652"(497.11)

https://doi.org/10.2298/STA2373089M
Original research article

BEBINA MILOVANOVIĆ, Institute of Archaeology, Belgrade
SNEŽANA GOLUBOVIĆ, Institute of Archaeology, Belgrade
ILIJA MIKIĆ, Institute of Archaeology, Belgrade

RECENTLY DISCOVERED LEAD COFFINS FROM *VIMINACIUM* (*MOESIA SUPERIOR*)

e-mail: bebina27@yahoo.com

Abstract. – Burials in lead coffins have been sporadically recorded in *Viminacium* (*Moesia Superior*). They originate from four necropolises that can be roughly classified into the period from the 2nd to the 4th century. This paper presents twelve lead coffins from recent excavations. They were found directly in a pit without construction, or in a construction of bricks. Lead coffins were often ornamented with different linear-geometric motifs, or figural depiction in one rare instance. A workshop can be expected to have existed in *Viminacium* for the production of lead objects for various purposes such as coffins and many other finds that have been found in large numbers. In some of the coffins, items have been preserved. These include jewellery made of gold, ceramic vessels, glass bottles, bone finds, etc. In nine of them, the skeletal remains of the deceased were completely or at least partially preserved. Included in the paper is an anthropological analysis of the skeletal remains of those deceased. Based on the anthropological analysis, it can be seen that the deceased were mostly children (six cases), while in three cases they were adults.

Key words. – lead, coffin, grave, Viminacium, ornament, jewellery, vessels, anthropological analysis

Large cities in the past, as now, were centres of various influences and ideas, socially and culturally, ethnologically, architecturally, and in every other respect. *Viminacium* (today the village of Selo Kostolac, Serbia) was not only the capital of the province of *Moesia Superior* but, because of its geographical situation, was also exposed to centuries-old intertwining of western and eastern influences, best reflected through burial rituals and grave inventory.[1] The necropolises that extended south of the city represent the best researched part of the site so far.[2] Only partial research has been carried out thus far at necropolises to the east [3] and north of the city (Map 1).[4] About 15,000 explored graves from the prehistoric period, through Antiquity to the Middle Ages, testify to the continuity of life, death and revival, through the writings of scientists.

During the ancient period, both cremation and inhumation were practiced at *Viminacium*. During the first two centuries AD, burials of the cremated deceased were dominant in specific pits. Those pits were more or less of a rectangular shape with burnt sides, with one or two levels, and finally, although quite rare, with three levels.[5] At the same time, inhumation was also practiced, most often in simple pits, without any construction or in wooden coffins. Until now, researchers have supported the hypothesis that the cremation graves in pits could be related to the autochthonous, partially Romanised, population.[6] On the other hand, the inhumations of the deceased during the 1st and 2nd

[1] Mirković 1968, 56–67; Mirković, 1986.

[2] Zotović, Jordović 1990; Korać, Golubović 2009; Korać, Mikić 2014; Golubović, Milovanović, Redžić 2022.

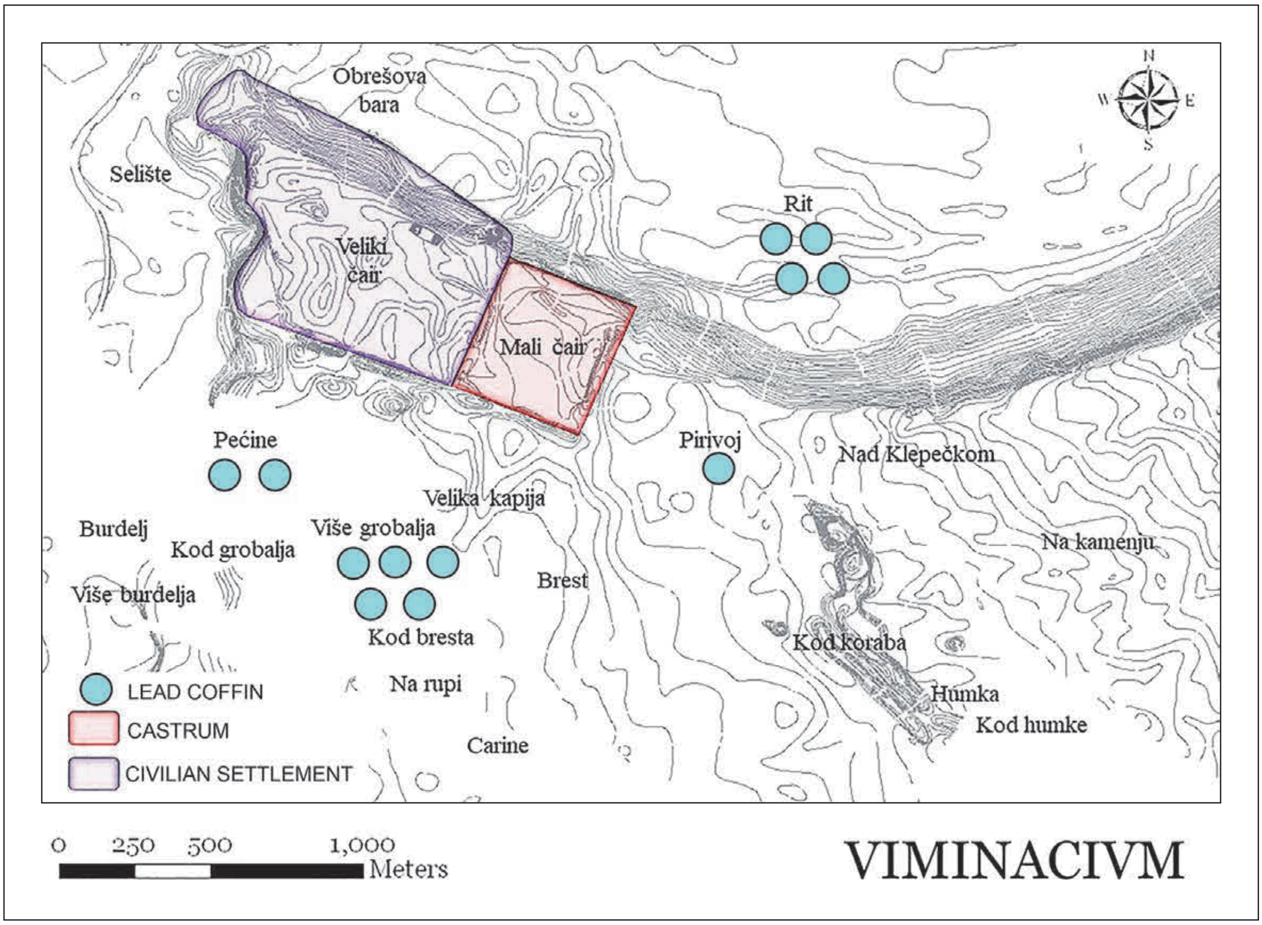
[3] Danković, Milovanović, Mikić 2018, 35–42; Redžić, Danković 2012, 54–57; Redžić, Jovićić, Danković 2014, 63–65.

[4] Milovanović, Mrđić, Kosanović 2019, 97–108.

[5] Jovanović 2000, 204–214. Dominated by graves Mala Kopašnica Sase I and II.

[6] Zotović 1984, 166; Jovanović 2000, 206.

Manuscript received 2nd February 2023, accepted 23rd September 2023



Map 1. General situation at the Viminacium archaeological site (after M. Vojvoda, J. Anđelković Grašar 2022, 14)

Карта 1. Општа ситуација на налазишту Виминацијум (према М. Војвода, Ј. Анђелковић Грашар 2022, 14)

centuries, which were rarer, have been attributed to the Eastern tradition, i.e., immigrants from the eastern provinces of the Roman Empire who, as soldiers, craftsmen, and merchants, were indispensable inhabitants of large cities. Significant changes occurred from the second half of the 3rd century when cremation completely disappeared from the area of the *Viminacium* necropolises and was replaced by inhumation.[7] This change also resulted in more diverse types of graves of inhumed deceased. Beyond the already existing simple grave pits and wooden coffins, more and more often graves were of a brick construction. The construction could have walled sides consisting of vertically placed bricks, or walls made of some rows of bricks. All bricks were bound with lime mortar or mud. Inhumations in stone and lead coffins are relatively rare and are present in the period from the 2nd to the end of the 4th century.

Lead had a variety of uses during the ancient period, primarily due to its cheap production. Due to its low melting point, softness, but also weight, it was mostly used in the production of water pipes, weights, projectiles, and plumb lines, and for the production of various structural elements in construction. Due to its specific colour, durability and resistance to corrosive effects, weight, and possible poisonous characteristic, lead found a special use in the production of cult-related objects (icons of the „Danubian Horsemen", figurines of deities, miniature mirror frames, curse tablets, etc.). Taking into account all the above properties, presumably, this metal was used in the sepulchral practice of the Roman Empire. Burials in lead coffins have been sporadically recorded throughout the empire, from

[7] Jovanović 2000, 210–211.

Britain, Gaul, and Germany all the way to Syria and Palestine, from the 2nd to the 5th and 6th centuries. Previous research has shown that this was not a usual burial practice in the Roman Empire. The largest number of lead coffins originates from Asia Minor, which is explained by the special affinity and skilfulness of the people from the Middle East to make works of art from metal.[8] In Asia Minor, there were no mines from which lead could be extracted, so it was imported from others areas such the Balkans and Britain or Gaul. It could be concluded that, considering its geographical distribution, this form of burial is represented in larger urban centres in which, as we have previously stated, a diverse ethnic population was presented, but also in smaller places near the mines from which the lead was extracted, i.e., where there were raw materials. These places were also inhabited by people from different parts of the empire who came to work in the mine and in the craft production that took place in the immediate vicinity of the mine, as well as in the trade. Lead coffins in the area of *Moesia Superior* have been found in places that were important administrative centres: *Viminacium*, *Singidunum*, and *Naissus*, as well as settlements near mines: *Kosmaj* (Guberevac, Babe, Gomilice), *Municipium DD* (Sočanica), and *Ulpiana* (Lipljane).[9] Lead coffins mostly contained skeletal bones of deceased. However, the exceptions are three coffins in which the remains of cremated deceased were found (two from the necropolis of Guberevac–Kosmaj and one from *Viminacium*).[10] The remains of burned bones were also found in three lead reliquaries (one from Slatina and two from *Viminacium*). The findings belong to the 2nd–3rd century.[11]

THE TYPE OF GRAVES WITH LEAD COFFINS

Lead coffins from *Viminacium* were the subject of interest at the beginning of this century, and are partly covered by monographs and journals, which deal with mines, exploitation, and objects from lead from the area of Serbia.[12] During archaeological excavations at the necropolises of *Viminacium* in the last few years, lead coffins have been found, but have not been analysed or interpreted from an archaeological or anthropological point of view so far. They originate from four necropolises that can be roughly classified into the period from the 2nd to the 4th century. They are the following necropolises: Više Grobalja, Rit, Pećine and Pirivoj, where a total of twelve unpublished lead coffins were found (Map 1). In nine of them, the skeletal remains of the deceased were completely or at least partially preserved. Therefore, a section in this paper deals with the anthropological analysis of the skeletal remains of those deceased. For archaeological analysis, it is significant that the three sarcophagi were saved from looting, with a complete burial inventory, which represents a real rarity (graves 2332, 2544 and 2612).

Recently discovered lead coffins from *Viminacium* were found directly in a pit without any construction (Pl. I), or in a construction of bricks. Graves with a brick construction were usually built of horizontally arranged bricks bound with lime mortar or mud (Pl. III), or with sides consisting of vertically placed (slightly inclined) bricks (Pl. II). The covers of all graves with a construction were damaged and dislocated during grave robberies, but the preserved parts testify to the covers being placed in different ways. Most often, these were horizontally arranged bricks in one or more staggered rows.

Besides the mentioned methods of placing lead coffins, two specimens were found in *Viminacium* during earlier excavations in brick constructions buried inside the same memorial building, with three conches, while one was placed under the floor of another memorial building in which three more stone sarcophagi were found.[13] Two hoards were found in that building from the 4th century, but the burial in a lead coffin is probably from the middle or second half of the 3rd century.[14]

From those coffins that were placed directly into a pit, the specimen from grave 6024 stands out. Five iron nails were found under the bottom of the coffin, which could indicate the existence of a wooden structure on which the coffin was placed. Nails of smaller

[8] Bertin 1974, 44. In Asia Minor there were no mines from wich lead was exploited, but it was imported from the others areas such the Balkan as Britain or Gaul.

[9] Milovanović 2017, 269–279, Cat. no. 374–404; Actor 2015, 115–116; Milovanović 2017,128.

[10] Glumac 2015, 115–116, figs. 111–112; Milovanović 2017, 276, Cat. no. 400.

[11] Јовичић, Богдановић 2022, 193–194, кат. 98 и 99; Milovanović 2017, 128–129; 278–279; Pop-Lazić, Jovanović, Mrkobrad 1992, 135–143.

[12] Golubović 2002, 629–640; Golubović 2001, 135–158; Milovanović 2017, 121–127.

[13] Milovanović 2017, 273, Cat. no. 387; 277, Cat. no. 401–402.

[14] Vojvoda, Mrđić 2017, 36–37.

dimensions (up to 2 cm long) were found east of the coffin, and similar ones were hammered into the coffin and served to fix the lid. There is a well-known example of a coffin from Jerusalem near which, in addition to nails, straight and angular iron strips (25 cm long) were found, which are presumed to have connected the wooden planks on which a lead coffin was placed. Similar examples dated to the 3rd century are known from Bologna and Britain.[15] Iron nails were placed along the upper edge of the coffin and lid of the specimen from *Viminacium*, as well as on the lid of the lead reliquary and were used to fix the lid.[16]

TECHNIQUE OF MAKING AND DECORATION COFFINS

The technique of making coffins and lids from lead was dealt with in detail by A. Cochet, who singled out several variants and sub-variants.[17] This classification was also applied to coffins from *Viminacium*. All coffins were created by cutting off corner squares from a lead plate, which gave a cross shape, and then the sides were bent up vertically to form a parallelepiped-shaped coffin.[18] The corners of the coffin were connected on the outside with lateral lead strips that covered both sides of the coffin.[19] In almost all specimens, cast lead is visible from the inside of the corners, which additionally contributes to the strength of the coffin.[20] The thickness of the sides varies between 5 and 8 mm. The upper sides of the coffin were cut straight. Only in the case of the coffin of grave 118 are they profiled in the shape of the letter „L", about 3 cm wide. The lids were made of a rectangular board whose sides were mechanically folded over the trunk and cross over the sides by about 5 to 7 cm, with the lateral sides folded over the longitudinal sides.[21] The two lids have notched corners that overlap the sides of the coffin (graves 2709 and 5910).[22]

Lead coffins could be decorated or undecorated. It is believed that each workshop had its own authentic templates from which the masters, and probably sometimes the customers themselves, chose certain models. Motifs in relief were made in a mould. First, there was a matrix on which the motif was assembled, and then a mould was made according to that matrix. Many motifs are repeated several times on the same coffins, as well as on other specimens. This means that even though the mould was destroyed after each casting, the matrixes were preserved. Simple processing of lead, as well as the use of moulds in making ornaments, indicate that the artist was not expected to have any special skills or abilities, which means that, in the production of lead coffins, industrial production was used in which stereotypical patterns were used as models.[23]

They were usually decorated with various relief representations made in a one-piece mould or, less often, with applied ribbons and relief depictions. The motifs were varied, from linear-geometric (crossed lines, rosettes, rhombuses, astragals (bead-and-reel), motifs of ropes, fir branches, etc) to luxurious figural representations (gods, depictions of mythological creatures, animals, etc), often in an architectural environment or combined with linear-geometric motifs. In extremely rare cases, they contained an inscription that mainly refers to the name of the deceased.[24] Unlike the stone sarcophagi with relief decoration and inscriptions, which were often on display, the lead coffins were far from the public eye. Luxuriously or modestly decorated, it is as if they aimed to convey the displayed message to another world in order to appease the gods and protect the deceased from all troubles. On the other hand, there were rational reasons why the coffins were buried in a pit, and those included, above all others, the danger of desecration and looting. Unfortunately, despite everything, lead coffins were very often robbed.

Of the twelve coffins from *Viminacium*, nine contain relief decoration on the lid or on the lid and on the coffin. One is without decoration (Pl. IX/1) while the remaining two are mostly damaged, so we do not know whether or not they had any decoration (Pl. IX/2 and Pl. XI/1). The relief decoration on the coffin from *Viminacium* was created by sealing the motif into the soft surface of the negative mould from a positive model. Lead strips with embossed motifs on the coffin are rarely applied afterward. Such is the case, however, on the lid of the coffin from grave 2544 (Pl. V/1).

---

15 Rahmani 1976, 81–82.

16 Milovanović 2017, 278, Cat. no. 404–405.

17 Cochet 1978, 217–233.

18 Cochet 1978, type A, 217–233.

19 Cochet 1978, type A2, 217–233.

20 Cochet 1978, type A1, 217–233.

21 Cochet 1978, type M, 217–233.

22 Redžić, Jovičić, Mrđić and Rogić 2018, 81–82; Cochet 1978, type A, 217–233.

23 Bertin 1974, 46.

24 Cunjak, Marković-Nikolić 1997, 37–45; Rahmani 1987, 136, Pl. 15c; Chéhab 1935, 54, No. 30.

There is a narrow lead strip, decorated with two double twisted ropes positioned longitudinally, since three crossed lines forming a six-pointed star are depicted in the middle. On the longitudinal sides of the coffin from grave 2332, there are three narrow strips, filled with rosettes incised with a compass (Pl. IV/1). A similar technique, with narrow applied strips of identical dimensions and motifs, was applied to the previously published coffins with the heads of Medusa, from Viminacium.[25]

Among the motifs, linear-geometric ones dominate, which include crossed lines, rhombuses and squares made by twisting, which gives the motif of ropes or a bead-and-reel motif (*astragalus*). The ornament of multiple crossed lines is presented in several ways, the simplest being two crossed lines that intersect at right angles to form an isosceles cross (Pl. VIII/1). On the lid of the coffin from grave 45 was depicted the motif of a cross made of twisted lines in squares or rhombuses (Pl. VIII/2).[26] However, we cannot connect this motif with Christian symbolism. Both coffins were looted, only a ceramic pot was found in one (Pl. VIII/3) but, based on the finds from other graves, the necropolis was chronologically determined into the 2nd and 3rd centuries. Therefore, the cross as a Christian symbol was certainly not used for that purpose in that period but was shown as an ornament. The earliest depictions of the cross on lead coffins were present much later, in the first half of the 4th and at the end of the same century.[27]

The most common motif is two diagonally crossed lines that form the letter „X". This ornament is rarely shown independently, and is mostly in a rectangular or square field (Pl. V/1, Pl. VI/1, and Pl. VIII/1). On some coffins, the crossed lines end in arrows (Pl. X/2 and Pl. VIII/2). An identical motif is present on three other coffins from *Viminacium*, as well as on specimens from *Sirmium* and *Singidunum*.[28] The multiple crossed lines (three and four each) that form a star is positioned on the two coffins (Pl. VIII/1, and Pl. V/1).

Crossed lines made in the form of bead-and-reel (astragals) are shown on the lid of the coffin from grave 2618 (Pl. VII/1). The same motif is depicted on all four sides of the damaged coffin of grave 436 (Pl. XI/15). We have a similar ornament on a fragmented coffin from *Viminacium* and from *Singidunum*.[29] This motif was found on coffins of Sidon workshops and, over time, it was accepted throughout the empire.[30]

Figural representations on *Viminacium* lead coffins are rare. One coffin from grave 118 has a representation of four-legged animals in a chase (canines or felines?), on the longitudinal and lateral sides. The depictions of the animals do not provide enough detail to identify them precisely. (Pl. X/1). On the lid, there is a decoration in the shape of a square formed by astragals (bead-and-reel) and the representation of a Centaur with his arms in front of him (maybe with a bow and arrow?). The same depiction of a Centaur is in the middle of the longitudinal side, between two animals (canines or felines?). The depiction of a Centaur is unclear because the stamp impression is bad. Figural images such as animals, mythical creatures and gods are characteristic of all Asia Minor workshop centres. The images did not only have a decorative role, they also had certain significance in the eschatological concept of death. Direct analogies for the depiction of the Centaur on the lead coffins are not known to us, although there are scenes depicting Centaurs on some sarcophagi and mosaics. On the mosaics from the Triumph of Dionysus from Tunis, Centaurs can be seen fighting felines.[31] A similar scene is depicted on the mosaic from Hadrian's Villa.[32] If we connect these depictions with the representation on the coffin from *Viminacium*, then the four-legged animals could be interpreted as a being feline. On the other hand, they may be independent displays that are not necessarily part of the same scene.

THE WORKSHOPS

The largest centres for the production of lead coffins were in Asia Minor on the Lebanese coast (Tire, Sidon, and Beirut) and in present-day Israel (Ashkelon, Caesarea, and Jerusalem). These workshops differed not in their technique of production, but also in the decoration used. [33] The production in the mentioned workshops is roughly dated, with some deviations, from the middle of the 2nd to the middle of the

---

[25] Milovanović 2017, 273, Cat. no. 387; Golubović 2001, 143, Cat. no. 12, fig. 19–20.
[26] Milovanović, Redžić, Jovičić 2017, 73, Fig. 4.
[27] Rahmani 1987, 137–146.
[28] Milovanović 2017, Cat. no. 376–379; Cochet 1982, 139–141.
[29] Milovanović 2017, Cat. no. 384–385.
[30] Santrot, Frugier 1982, 272–286.
[31] Khader, Abed 2006, 92, fig. 5. 4.
[32] Harris, Zucker 2015.
[33] Rahmani 1988, 47–60.

4th century.[34] Such a workshop could be expected, with some certainty, to have existed in *Viminacium*. The numerous findings of lead (mirror frames, icons of the Danube Horsemen, figurines of the goddess Venus, water pipes, projectiles, weights, etc.) discovered during rescue and systematic excavations, as well as accidental finds, confirm the assumption that there was a workshop in *Viminacium* for the production of lead objects for various purposes. Based on reliably dated lead artifacts, the workshop could roughly have covered the period from the middle of the 2nd to the first half of the 4th century.[35] A recent find of a lead ingot that was secondarily used, inside the military camp at *Viminacium*, near the western gate, confirms the fact that lead bars arrived in the city, where they were then melted down to make various items. The nearest large, confirmed lead mine from which this ingot could have arrived is Kosmaj, but it is also possible that it was from the south of Serbia.[36]

GRAVE INVENTORY

Among the coffins that are the subject of this research, grave goods were found in seven. The lack of grave inventory in the other coffins is a consequence of robbery. All inventory found inside or outside coffins is sorted by material.

Ceramic vessels

Three jugs were found in grave 2612 (Pl. VI/1–3). They were placed pyramidally (two large ones next to each other, while the third smaller one was above them). They were found outside the coffin, right next to its western side. One of them has a threefold opening. These types of jugs are often finds from 2nd century graves, not only at the *Viminacium* necropolis, but also at the *Singidunum* necropolis and its surroundings.[37] Two beakers were found outside the coffin from grave 2332 (Pl. IV/2–3). It is possible that the beakers were taken out of the coffin during a robbery. In shape, they correspond to a small number of specimens from *Singidunum* that are dated to the 3rd century and mostly have a black-painted surface.[38] A ceramic pot with the remains of wooden sticks (five pieces) that burned at one end was found in the coffin from grave 2612 (Pl. VI/5). A second pot was found outside the coffin in grave 45 (Pl. VIII/3). Both pots have sloped rims and flat bases. The first is smaller, with a conical recipient while the second has an ovoid recipient and both are tied to local production.[39] Ceramic vessels from the above-mentioned graves were placed outside the coffin, the only exception being the pot with burnt wooden sticks that was inside the coffin. This practice was probably applied for practical reasons, primarily due to the lack of space in the coffin for somewhat bulkier ceramic vessels. There were probably liquids (water, wine, oil or milk) in the vessels. The burnt sticks in the pot testify to some magical-ritual act that was performed during the child's burial. All of the above vessels are in the form and quality of local production and represent the usual grave inventory in the *Viminacium* necropolises.

A ceramic oil lamp of the *Firmalampen* type was found in grave 6024 (Pl. XI/14). It has a circular flat discus and concave base. The discus is decorated with the image of a theatrical mask and an eccentrically positioned hole. There are three bulges on the shoulder. A stamp of FORTIS framed with concentric circles is on the base. Oil lamps off this kind are often found at *Viminacium*.[40]

Glass bottles

In the coffin from grave G-6024, which was deformed by mechanical excavators and damaged during the digging of the pipeline in the area of the thermal power plant, three prismatic bottles, made of transparent greenish glass, were found (Pl. XI/2–4). All three are similar in shape, wide-mouthed, with a thickened rim, short and cylindrical necks, a recipient

---

[34] Bertin 1974, 54–55. The coffins from Tire were characterised by an architectural structure (pillars, facade of the temple peristyle, crossed lines on lateral sides), and depictions of Bach, Gorgon, a sphinx, dolphin, and a lion. These were considered to be typical Oriental motifs. Sidon's coffins were characterised by linear motifs, crossed lines, rosettes, garlands and *astragalus* (bead-and-reel). Although they were richly decorated, like the Tyrian ones, the simplicity of the motifs was more connected to Greco-Roman art. Beirut coffins, similar to the Sidon ones, contained linear motifs, but with imaginative depictions, they were also associated with Hellenistic influences. Jerusalem coffins often have fields limited to vines with depictions of Victoria, Cupid, and an eagle. They also differ in the softness of their workmanship and are considered to have been created under Syrian influence.

[35] Popović 1992, 29–56.

[36] Milovanović 2017, 117–120.

[37] Zotović, Jordović 1990, Grave 242; Grave-105 cremation; Nikolić-Đorđević 2000, 139–140, Type VII/11.

[38] Nikolić-Đorđević 2000, 160, Type IX /1.

[39] Nikolić-Đorđević 2000, 92, Type II/73,75; Данковић, Миловановић 2022, 72-73; сл. 3; 93-94, кат. 29.

[40] Korać 2018, Vol II, Type IX c, 355, 1139A.

of square cross-sections, and flat bases. One of them has five small circular indentations, in the middle and in each corner, on the base. The base of the second is decorated with concentric circles.[41] The prismatic bottles have a broad chronological range from the second half of the 1st to the 4th century. Remains of whitish-grey matter (calcified sediment, perhaps of the original contents) were found inside one bottle. Next to the bottles was a small glass cup with a wide mouth, thickened rim, a spherical recipient and a flat base and made of greenish glass (Pl. XI/7).[42] The fifth glass vessel found next to the above is a glass toilet bottle (*balsamarium)* with a wide mouth, thickened rim, cylindrical neck and a large conical recipient, made of bluish glass (Pl. XI/5).[43] All vessels were compacted next to each other, and covered a area measuring 25 x 15 cm. Together with the vessels was half of a seashell (Pl. XI/8) and fragments of a chest (iron hoops, wedges, clamps, bronze handle, lock, and plates; Pl. XI/9–10), which indicates that all the bottles were inside a wooden chest placed to the south, outside the coffin. The sixth glass vessel is a smaller *balsamarium,* which was similar to the previously described (Pl. XI/6).[44] The toilet bottle was found inside a lead coffin, on its eastern longitudinal side. Toilet bottles of various forms are numerous in the graves of cremated and inhumed deceased of the *Viminacium* necropolises from the 2nd and 3rd centuries.[45]

Metal finds

In the child's coffin from grave 2544, gold jewellery was found, consisting of an earring with a loop and a hook (Pl. V/3), a more luxurious pelta-shaped pendant of gold with three wire pendants with beads on both ends (Pl. V/2), and two gold rings (Pl. V/4–5). Earrings are rarely present in children's graves, especially in those of younger children. If there are any, they are most often simple forms in the shape of a link with a hook and a loop, without pendants. Such is the case in the mentioned grave. This type of earring is the most common, primarily due to the simplicity of production, and they chronologically cover the period from the 2nd to the end of the 4th century.[46] A luxurious pendant decorated with a depiction of a kantharos, in the filigree technique, surrounded by four circular inlays with green beads is a unique find in Moesia. A specimen similar to the *Viminacium* example is known from Bakar (Croatia) and is dated to the 1st or 2nd century. It is associated with lunar pendants that originate from the Hellenistic tradition.[47] A similar pendant, as part of a larger composite head ornament, was found in *Ratiaria* (Thrace) and has been dated to the middle of the 3rd century. It was found in a children's sarcophagus with luxurious gold jewellery (torques, a necklace, four bracelets, and a ring). Another similar pendant is from Tunisia and is currently held in the British Museum. A hair ornament with a similar pendant is presented on a statue from Palmyra that is dated to the 3rd century.[48] A gold ring with a snake-shaped head was found on the finger of the right hand, while two rings made of gold braided wire connected by a small ring were found on a finger of the left hand. A ribbon snake-shaped finger-ring with open endings and with one and a half coils has the snake's head in the form of a deltoid, decorated with carved lines, and highlighted eyes. This form of ring originates from Hellenism, and analogous specimens from the National Museum in Belgrade are roughly dated to the 2nd and 3rd century.[49] The two gold finger rings have circular cross-sections, and they are decorated with thick carvings. The rings are mutually connected with a smaller, ribbon-shaped ring. Such pairs of rings are worn on adjacent fingers, and there are specimens of triple rings of a similar type. A few specimens are known in the Rhine area and in the eastern Roman provinces, where they do not appear before 135 AD. It is believed that they do not exceed the period after the first half of the 3rd century.[50]

A silver lamella, squarely folded, was found under the child's skull in the same coffin. The lamella is made of thin silver sheet metal with an engraved inscription in Greek, but the text has not been read yet. Miniature rectangular tiles made of thin gold or silver sheet metal are known in the literature as lamellae. They are usually found inside miniature cylindrical pendants-amulets (tubules).[51] They contained engraved magical inscriptions in Greek or Latin, and often only vague symbols that are difficult to interpret. A gold lamella

41 Isings form 50b; Ružić 1994, 11–12; Type I/b.
42 Isings 1957, 88–89, form 68.
43 Isings 1957; 34–35, form 16; Ružić 1994, 22–23, Type III/3.
44 Isings 1957, 42–43, form 28; Ruzic 1994, 25–27, type III/5.
45 Zotović, Jordović 1990, 57–61; 70, 78; 83–86, 96, 110.
46 Milovanović 2007, 12–13.
47 Becatti 1955, 202.
48 Ruseva-Slokoska 1991, 88–89; 208, Cat. no. 286.
49 Popović 1992, 25, 37, Cat. no. 21–22; Cat. no. 64.
50 Riha 1990, 43, Tafel 12, 226.
51 Milovanović 2018, 128, fig. 31; Popovć 2001, 53–58.

with an inscription was found in *Viminacium*, inside a silver tubule under the jaw of a child in a tomb from the 3rd century. The magical inscription contains the names and epithets of gods and goddesses that aim to protect the owner during life and after death. So, they have the function of amulets. The names of lesser-known deities from the Aramaic, Hebrew, Phoenician and Egyptian pantheons are engraved on the lamella from *Viminacium*. Some of them are often mentioned in magical texts, on gems and other objects and are related to the solar principle. They protect the souls of the deceased who roam the underworld or represent the mythical protective spirit.[52]

The many fragments of iron hoops, wedges, and clamps, and the bronze handle, lock, and plates, belong to the wooden chest that was placed outside the coffin from grave 6024 (Pl. XI/9–10).

Three bronze coins were found in two coffins. A bronze coin of Faustina I, after 141 AD, was positioned to the right of the child`s skull from grave 2544 (Pl. V/6). The second bronze coin is from the first half of the 2nd century (Pl. V/7). It was positioned under the child`s jaw from the same grave. It has three perforations and may have been used for the function of a pendant. Perforated coins are more present in the graves of inhumed dead than cremated ones, especially in children's graves. A coin with three perforations is considered to have been sewn on the clothes, as evidenced by the remains of fabric on some specimens of coins. Perforated coins from the southern *Viminacium* necropolises belong mainly to the 1st century and extremely rarely to the 2nd and 3rd centuries.[53] The third bronze coin, of Domitian 85/86 AD, is from grave 6024 (Pl. XI/11). The coin is damaged and had certainly been in use for a long time.

Iron shoe nails were found under the feet of the deceased from grave 2332, together with the remains of cork soles (Pl. IV/4). In a much better condition, the soles of several pairs of shoes of different sizes were found in the previously discovered lead coffin from *Viminacium*. The soles were made of leather and cork, while the shoes themselves were made of leather and knitted rope, with the remains of gold slips. The length of the soles was between 20 and 28 cm. Among them, the best-preserved pair of soles is 22.5–23 cm long.[54]

Ivory and bone finds

Among bone finds, the most common are needles. One short hairpin with a conical head is from grave 2618 (Pl. VII/2), while a sewing needle was found in grave 436 (Pl. XI/16).[55] Three sewing needles from grave 6042 were found together with another bone spatula and over fifty whole and more fragmented, extremely thin hairpins (Pl. XI/12). About 43 identical hairpins were previously found in the grave of the cremated deceased, which are dated with a Trajan's coin from the end of the 1st and the beginning of the 2nd century.[56] Extremely thin bone needles were probably used to attach a luxurious bun or veil.

In the mentioned grave 6024, on the same pile with hairpins and a spatula, a flat ivory object in the shape of a pelta with two square openings was found (Pl. XI/13). In the upper part, where the ends bend, there is one circular perforation. Next to the object were two bone sticks of square cross-section, which formed an integral part of the object. These two sticks passed through the perforations in the lower part of the plaque. This item was used to unroll papyrus, and belongs to writing implements. In its original form, it consisted of two identical ivory plates with perforations through which pass two sticks, around which the papyrus is unwound. It is believed that ten sticks passed through the upper circular perforations and served to stabilise the object and set in place the papyrus. Objects of this shape are known as papyrus-roll winders. The most similar to the specimen from *Viminacium* is one of the two finds from a museum in Nîmes, which belongs to the 1st and 2nd centuries.[57] More luxurious specimens are know from Pompeii, Fitzwilliam Museum (Cambridge) and Ostia, but there are also examples in Gaul and Romania.[58] All the mentioned ivory and bone objects from that grave were found along the eastern longitudinal side inside the coffin, which was mostly deformed by mechanical tools. It is possible that they were placed in a bag together with a glass *balsamarium* before being deposited in the coffin, which has already been mentioned (Pl. XI/6).

[52] Korać, Ricl 2017, 164–170.

[53] Vojvoda 2018, 65–87.

[54] Spasić-Đurić 2015, 214, Cat. no. 226; Golubović 2000, 83–100, figs. 3–6, 8.

[55] Danković, Milovanović, Mikić 2018, 38, Fig. 4.

[56] Vojvoda, Mrđić 2017, 132, Cat. no. 349.

[57] Wood 2001, 30–31, fig. 9.

[58] Wood 2001, 23–40.

ANTHROPOLOGICAL ANALYSIS OF SKELETONS FROM LEAD COFFINS

Of a total of twelve lead coffins that were archeologically excavated in four necropolises of *Viminacium*, nine contained skeletal remains. They were assigned ordinal numbers: graves 2332, 2544, 2612, 2618, and 2709 from the necropolis of Više Grobalja. Two sets of skeletal remains, marked as graves 5910 and 6024, were found at the Pećine necropolis, while one skeleton one each was represented at the Rit and Pirivoj necropolises, in graves 45 and 436. As for the Rit necropolis, three more lead coffins were found in it, but no remains of deceased individuals were found in them, which was probably a consequence of the robbery and devastation of the skeleton. The results of anthropological analysis are presented in the following part of the text. They were, in some cases, limited by the poor preservation of the skeletal remains.

Methodological framework

The standards given by Schutkowski[59] were used to determine the gender of children's skeletons. That is, Ubelaker for individual age based on tooth eruption.[60] When it comes to determining individual age and sex in adults, the method used by D. Ferembach, I. Schwidetzki and M. Stloukal was used.[61] Dental status, in addition to the mentioned scheme provided by Ubelaker, was analysed on the basis of recommendations given by Lovejoy.[62] Palaeopathological changes were viewed according to Ortner's Atlas[63], as well as Aufderheide and Rodriguez-Martin[64], with certain interpretations taken from Šlaus.[65] Morphological changes of the auricular surface of the pelvis were used according to the method of Lovejoy.[66] The degree of preservation of the skeleton was determined according to the model provided by Mikić.[67] The method of Trotter and Gleser was used to determine body stature.[68]

Više Grobalja Necropolis

Skeletal remains from all five lead coffins were available for anthropological analysis. They are the skeletons with the following numbers: graves 2332, 2544, 2612, 2618, and 2709.

The skeleton from grave 2332 belonged to a male person who was between 25–30 years old at the time of death (Table 2). Orientation of the deceased was in a W-E direction. Palaeopathological status shows Schmorl nodes (Fig. 1, 2) on the spinal column in the thoracic part of the spine. These occur as a consequence of degenerative and traumatic changes of the intervertebral disc due to sudden movements and loading of the spine when the intervertebral disc herniation actually occurs, which happens when the nucleus pulposus penetrates the fibrous ring or the cartilage of the vertebrae. Clinically, the most severe consequences occur when it penetrates the spinal canal and presses on the spinal cord, but changes usually happen when it penetrates the bodies of adjacent vertebrae when shallow, round or renal defects occur, which are usually no more than one centimetre long. This pathological condition of the vertebrae is of great importance to us in the analysis of archaeological populations, i.e., it tells us about the quality of life and the amount of physical work required for the population to continue living.[69] When it comes to dental status, minor abrasion was noted, which was barely visible due to the poor preservation of the teeth.

Body stature was calculated by measuring the long bones and was 169 cm ±4.57 cm, based on the length of the femoral bone (Table 3).

The next skeleton originating from the same necropolis was found in the grave marked 2544. The orientation of the deceased was in a NE-SW direction. Due to poor preservation, it could be determined that it was a child (female) who was between two and four years old at the time of death (Table 2).

The deceased from grave 2612 was oriented in an E-W direction and, as in the previous case, belonged to a female child. The age was determined to be one year old with a deviation of ± four months.

From the grave marked 2618, only the cranial part of the skeleton has been preserved. In this case, the orientation of the deceased was in a S-N direction. The individual's age, based on tooth eruption, is estimated at five to nine years old.

---

[59] Schutkowski 1993, 199–205.
[60] Ubelaker 1965.
[61] Ferembach et al. 1980, 517–549.
[62] Lovejoy 1987, 47–56.
[63] Ortner 2003.
[64] Aufderheide, Rodriguez-Martin 2006.
[65] Šlaus 2006.
[66] Lovejoy, 1985, 15–28.
[67] Mikić 1978, 9.
[68] Trotter, Gleser 1958, 463–514, 51a.
[69] Šlaus 2006, 213–214.

Necropolis	Grave No.	Sex	Age at death
Više Grobalja	G-2544	Female	2–4 years
Više Grobalja	G-2612	Female	1 year ± 4 months
Više Grobalja	G-2618	/	7 years ± 24 months
Više Grobalja	G-2709	Female	5 years ± 16 months
Pećine	G-5910	/	Child
Rit	G-45	/	2–4 years

Table 1. Sex and age of children

Necropolis	Grave No.	Sex	Age at death
Više Grobalja	G-2332	Male	25–30 years
Pirivoj	G-436	Female	30–40 years
Pećine	G-6024	/	Adult

Table 2. Sex and age of adults

Long bone	Više Grobalja G-2332	Pirivoj G-436
Tibia	168 ± 4cm	161 ± 3.66 cm
Fibula	165 ± 3.86 cm	/
Humerus	169 ± 3.94 cm	162 ± 4.45 cm

Table 3. Stature estimated according to long bones measurements

The orientation of the deceased was W-E. The skeletal remains from grave 2709 were also poorly preserved but, on the basis of the preserved bones, it could be determined that this individual was a female child of about five years old, with a deviation of ± sixteen months.

Pećine Necropolis

In the grave marked 5910, due to the incomplete preservation of the skeleton, nothing could be stated, except that it was a child. The orientation of the deceased was N-S.

With the skeleton from grave 6024, the situation is somewhat different, that is, the sex and age could not be determined more precisely, but in this case it is an adult individual with an orientation of N-S.

Rit Necropolis

In addition to the fact that four lead coffins were found in this necropolis, skeletal remains were missing in three cases, while a few bones of the deceased were found in grave 45. This deceased was oriented in a W-E direction.

In this case, the deceased was between the ages of two and four, but it was impossible to determine the sex due to poor preservation.

Pirivoj Necropolis

From grave 436, where a lead coffin was also found, originate the skeleton of a female individual who was between 30–40 years old at the time of her death. In this case the orientation was in a W-E direction.

Anatomical variation is present on the left humerus (supra-condyloid foramina). This occurs in greater numbers in women than in men, and is a consequence of an abnormality in the ossification of the coronoid and olecranon fossa (Fig. 3). Body growth was calculated based on the maximum length of the humerus and tibia and is shown in Table 3.

CONCLUSION

The deceased were buried in lead coffins directly in a pit or in a grave of a brick construction. Lead coffins in graves of brick constructions appear at the same time when this form of burial became more and more dominant in the *Viminacium* necropolises, which was the beginning of the 3rd century. On the one hand, it became a generally accepted practice, so more and more often in the columbaria of the cremated dead, the so-called Mala Kopašnica Sase II type brick constructions appeared von the lower floor. On the other







Fig. 1, 2. Grave 2332, Više Grobalja necropolis, Schmorl nodes on thoracic vertebrae (photo I. Mikić)
Fig. 3. Grave 436, Pirivoj necropolis, Supracondyloid fossa on the left humerus (photo I. Mikić)

Сл. 1, 2. Гроб 2332, некропола Више гробаља, Шморлови дефекти на торакалном делу кичме (фото: И. Микић)
Сл. 3. Гроб 436, некропола Пиривој, Супракондилоидни отвор на левој раменој кости (фото: И. Микић)

hand, brick constructions could have been used to protect the coffin from deformation. Cases of placing a lead coffin inside a wooden coffin have already been mentioned. There is also a well-known example from London, where a lead coffin was inside a stone sarcophagus (https://spitalfieldslife.com). Burials in lead coffins were present in *Viminacium* from the 2nd to the middle of the 4th century.

Lead coffins were often ornamented. Among the *Viminacium* examples, linear-geometric motifs dominate, which have a certain symbolic connotation with the aim of protecting the deceased from evil and enabling him/her to enter the world of the dead. Figural representations are rare, and simple. However, they were not chosen by chance, but refer to the world of the dead, immortality and the protection of the dead in the afterlife, but most of the ornaments retained only a decorative role over time.[70]

[70] Rahmani 1987, 146.

In lead coffins from the Roman Empire, skeletal material is mostly scarce or non-existent. Although certain anthropological analyses have been undertaken, they are scarce and superficial. For example, for two deceased buried together in a lead coffin from the vicinity of Jerusalem, it was determined that one belongs to the Danube group from Central or Eastern Europe, while for the other, it could only be stated that does not belong to the Mediterranean group.[71] The results of isotope analysis performed on a skeleton from a lead sarcophagus found in London were recently published. It was determined that the person in question was a young woman in her early twenties, who spent most of her life in Rome and died immediately after arriving in London (https://spitalfieldslife.com).

Based on the anthropological analysis of the skeletons from the *Viminacium* coffins, it could be seen that the deceased were children in six cases, while in three cases they were adults. The situation is similar with previously published coffins from *Viminacium*.[72] The slightly worse preservation of the skeleton conditioned and limited the anthropological analysis to obtaining basic paleodemographic data. The remains of skeletons were not found in three coffins (Rit necropolis, graves 86, 94 and 118), which may have disappeared as a result of opening due to looting and further devastation. Adults were represented by one deceased female and one male and also one individual with indefinite gender, while with the children the sex could be more precisely determined also on only three skeletons, all of which were girls. A single deceased was buried in all the analysed coffins, but during previous research there were cases of the burial of several individuals (an adult with two children).[73] Burials of two people are known in lead coffins from Jerusalem (two children aged 10 and 4, and two women aged between 30–35 and 40–45).[74]

Observing the palaeopathological status, it could be concluded that only in three cases where adults were involved, could it be noticed that traces of daily activities were present on the bones. In the first place, Schmorl defects could indicate physical work. When it comes to deceased children, we did not come across more data that could be used to make any conclusions regarding their health status. Somewhat more specific information could be provided by analyses of ancient DNA or isotopic relationships, which would complement the archaeological interpretation of burying the dead in this way.

As for the ethnicity and social affiliation of the population that practiced burial in lead coffins, there are the opinions that it was a population from the East because they practiced inhumation as the only form of burial during the ancient period. Also, the most famous workshops for making lead coffins were from the shores of Asia Minor. It is known that immigrants from cities in Asia Minor (merchants, craftsmen and miners) lived during the 2nd and 3rd century, not only in *Viminacium*,[75] but also in other major urban centres and mining areas throughout the empire. It is believed that they, as well as soldiers who eventually progressed in the service and as veterans remained to live in the places where they ended their military careers, spread this form of burial. These were not the only ones; over time, the Romans as well as the Romanised population throughout the empire accepted this form of burial, which was not dominant, but still present. This is confirmed by grave inventory like gold jewellery thatt can be said to have been made under the influence of the East, as well as the remains of clothing that was certainly imported from the same areas, among which were the remains of silk and gold thread.[76]

In addition, it should be noted that there was no lead ore in Asia Minor, so it was imported from other areas of the empire. This certainly included the Balkans, from where lead ingots were exported to the other areas of the Roman Empire. However, we will not know who the first to use lead coffins for burial were. Perhaps we should not rule out the possibility that coffins first appeared in places where there was the most lead ore. Simpler examples were made there, while later, in the Middle East, more complex production was developed, recognisable by its extremely luxurious ornaments.

Our intention is for further research to be focused primarily on the analysis of ancient DNA and isotopic relationships that will give us answers regarding the ethnicity of the deceased buried in lead coffins. This will resolve the dilemma of whether ethnicity or religion were crucial in choosing a lead coffin at all, or whether it was, rather, a generally accepted fashion of wider social circles.

---

71 Rahmani 1976, 81.

72 Milovanović 2017, 270–278.

73 Milovanović 2017, 271, Cat. no. 382; Golubović 2001, 142, Cat. no. 9.

74 Rahmani 1976, 80–81.

75 Mirković 1968, 69; Mirković 1986, 59, 175–176.

76 Spasić-Đurić 2015, 215, Cat. no. 227; Golubović 2002, 632.

CATALOGUE

1. *Viminacium*, „Više Grobalja" site
trench 287, G-2332, C-13255 (Pl. IV/1)

Material and workmanship: lead, casting.
Dimensions: coffin – length: 182 cm, width: 56 cm, height: 30 cm; lid – length: 187 cm, width: 56 cm.
Orientation: west-east, with 25° deviation from west to south.
Grave construction: brick construction

The lead coffin was placed inside the grave construction made of bricks. The construction has longitudinal sides consisting of five vertically placed bricks, lateral sides formed of a single vertically set brick each, a cover created from four bricks over the grave space and horizontally set bricks around it, together with a floor consisting of seven bricks. Bricks are bound with lime mortar. The lid of the coffin is undecorated. One longitudinal side of the coffin is decorated with three wide, vertically positioned stripes divided into four square fields with rosettes. The other sides are not decorated. Inside the coffin, the deceased was found lying on his back in a stretched position. The skeleton is 1.68 m long. The remains of the sole of a shoe were on the right foot (length: 23.3 cm).

Inventory:

1. A ceramic beaker with sloped rim, ovoid shape, and a flat base; made of fine clay, fired grey; dimensions – rim diameter: 68 mm, base diameter: 44 mm, height: 94 mm, (C-13253). Pl. IV/2
2. A ceramic beaker with sloped rim, ovoid shape, and a flat base; made of fine clay, fired grey; dimensions – rim diameter: 67 mm, base diameter: 42 mm, height: 95 mm, (C-13254). Pl. IV/3
3. Iron shoe nails (C-13258). Pl. IV/4

2. *Viminacium,* „Više Grobalja" site
trench 305, G-2544; C-13749 (Pl. V/1)

Material and workmanship: lead, casting.
Dimensions: coffin – length: 90 cm, width: 33 cm, height: 26 cm; lid – length: 87 cm, width: 31 cm.
Orientation: northeast-southwest.
Grave construction: no construction.

The lead coffin of a child was placed in a pit without a construction. It was in a good state of preservation. The lid is decorated with two double twisted ropes positioned longitudinally, but broken in the middle, since three crossed lines forming a six-pointed star are depicted in the interspace at the break spot. A double twisted rope decoration broken in the middle is also present on both longitudinal sides of the coffin along the upper edges, while the side edges are decorated with lines. An eight-pointed star motif is present on both lateral sides. Inside the coffin, the deceased was found lying on his back in a stretched position with arms next to the body. The deceased was wrapped in a linen cover.

Inventory:

1. A bronze coin of Faustina I, after 141 AD; positioned to the right of the skull; dimensions – diameter: 26 mm, (C-13741). Pl. V/6
2. A bronze coin from the first half of the 2nd century; with three perforations; may have been used in the function of a pendant; positioned under the jaw; dimensions – diameter: 20 mm, (C-13742). Pl. V/7
3. An earring made of gold wire, link-shaped with a loop and a hook on both ends; positioned to the right side of the skull; dimension – diameter: 13 mm, (C-13743). Pl. V/3
4. A pelta-shaped pendant of gold, with three wire pendants having beads on both ends; positioned on the chest; pendant decorated with a depiction of a kantharos in the filigree technique, surrounded by four circular inlays with green beads; dimensions: 42 mm x 32 mm, (C-13744). Pl. V/2

   Literature: Миловановић, Рецић 2022, 339, кат. 28.
5. A snake-shaped ribbon finger-ring with open endings; positioned on the finger of the right hand; with one and a half coils; the snake's head in the form of a deltoid, decorated with carved lines, and highlighted eyes; dimensions – diameter: 14 mm, (C-13745). Pl. V/ 4

   Literature: Миловановић, Рецић 2022, 342, кат. 33.
6. Two gold finger rings with circular cross-sections, carved with a thick net; the rings are mutually connected with a smaller ribbon-shaped ring; positioned on the finger of the left hand; dimensions – diameter: 15 mm, (C-13746).

   Literature: Миловановић, Рецић 2022, 336, кат. 24. Pl. V/5
7. A silver lamella, squarely folded; positioned under the skull; dimensions: 10 x 10 mm, (C-13747).

3. *Viminacium*, „Više Grobalja" site
trench 307, G-2612; C-13895 (Pl. VI/1)

Material and workmanship: lead, casting.
Dimensions: coffin – length: 76 cm, width: 32 cm, height: 26 cm; lid – length: 78 cm, width: 33 cm.
Orientation: east-west, with 18° deviation from east to south.
Grave construction: brick construction.

The lead coffin of a child was placed in a pit lined with bricks on one longitudinal side. It was in a good state of preservation. The lid, both lateral and one longitudinal side of the coffin are decorated with geometric motifs, while the other longitudinal side is not decorated. Irregular squares incised in other squares are present at both ends of the lid, while in the middle there is a motif of two crossed lines. The decoration of the longitudinal side is made of lines forming four square/rectangular fields with an inscribed irregular rhombus, crossed lines, rectangle and crossed lines. The lateral sides are decorated with lines forming one field each, in the shape of a rectangle with crossed lines. Inside the coffin, the deceased was found lying on his back in a stretched position with arms next to the body. The deceased was wrapped in a linen cover.

Inventory:

1. A fragmented ceramic jug with one handle, probably a threefold opening, circular in cross-section, and flat base; red fired, with red coated surface; positioned outside of the coffin; dimensions – base diameter: 41 mm, height: 96 mm, (C-13896). Pl. VI/2

2. A ceramic jug, circular in cross-section, with cone grooved rim; red fired, with red coated surface; positioned outside of the coffin; dimensions – rim diameter: 38 mm, base diameter: 51 mm, height: 170 mm, (C-13897). Pl. VI/3

3. A ceramic jug circular in cross-section, with cone grooved rim; red fired, with red coated surface; positioned outside of the coffin; dimensions – rim diameter: 35 mm, base diameter: 52 mm, height: 170 mm, (C-13898). Pl. VI/4

4. A ceramic pot with sloped rim, a conical recipient and flat base; greyish-brown fired and untreated surface; five wooden sticks, burned on one end and found inside; positioned inside the coffin; dimensions – rim diameter: 100 mm, base diameter: 52 mm, height: 124 mm, (C-13899). Pl. VI/5

Literature: Данковић, Миловановић 2022, 93–94, кат. 29.

4. *Viminacium*, „Više Grobalja" site
trench 307, G-2618; C-13906 (Pl. VII/1)

Material and workmanship: lead, casting; damaged.
Dimensions: coffin – length: 136 cm, width: 40 cm, height: 30 cm; lid – length: 135 cm, width: 40 cm.
Orientation: north-south, with 13° deviation from south to west.
Grave construction: brick construction.

The lead coffin of a child was placed inside the grave construction, made of bricks, with two lateral sides and one longitudinal side consisting of vertically placed bricks, cover formed from several rows of bricks, irregularly placed on the top of the grave (possibly after a robbery), and floor created of five bricks. The joints between bricks were filled with earth. The coffin lid was broken, and has a hole made during a robbery. The skull was found on the edge of the lid hole, while the other bones are missing. The lid decoration consists of two strips in the shape of twisted ropes present along its longitudinal edges, while the space in-between is divided into four square fields with square shapes having crossed strips inside, all strips being formed as astragals (bead-and-reel). The coffin is not decorated.

Inventory:

1. A bone needle found on the lid of the coffin; dimensions – length: 40 mm, (C-13905). Pl. VII/2

5. *Viminacium*, „Više Grobalja" site
trench 311, G-2709; C-14109 (Pl. VIII/1)

Material and workmanship: lead, casting,
Dimensions: coffin – length: 120 cm, width: 35 cm, height: 30 cm; lid damaged and deformed during a robbery.
Orientation: west-east, with 16° deviation from west to north.
Grave construction: brick construction.

The lead coffin of a child was placed inside a grave construction with walls made of ten rows of bricks, and a cover of bricks, which is damaged. All bricks are bound with lime mortar. The coffin is decorated, while the lid does not have any ornament. The longitudinal sides are decorated with two crossed lines on both ends, while both lateral sides have two thick lines with three crossed lines forming a six-pointed star in between, thus, dividing the lateral sides into three almost equal fields. The bones of the deceased are damaged and dislocated.

Inventory: no inventory.

6. *Viminacium*, "Rit" site
trench 51, G-45; C-1648 (Pl. VIII/2)

Material and workmanship: lead, casting.
Dimensions: coffin – length: 137 cm, width: 36 cm, height: 26 cm; lid – deformed during a robbery, preserved to a length of 70 cm.
Orientation: north-south.
Grave construction: no construction.

The lead coffin of a child was placed in a pit. The lid decoration is divided into square or rectangular fields with inscribed squares (rhombuses), all formed with twisted ropes. In the three preserved inscribed figures, two crossed twisted ropes, two crossed astragals (bead-and-reel) and three crossed lines (six-armed star) with triangles (spikes) on the ends are present in succession. The coffin is not decorated. The bones of the deceased are dislocated.

Inventory:

1. A ceramic pot with sloped rim, the ovoid recipient, and a flat base; red fired and untreated surface; positioned outside of the coffin; dimensions – rim diameter: 122 mm, base diameter: 61 mm, (C-1649). Pl. VIII/3.

Literature: Milovanović, Redžić, Jovičić 2017, 73, fig. 4.

7. *Viminacium*, "Rit" site
trench 230, G-86; C-2292 (Pl. IX/1)

Material and workmanship: lead, casting; damaged.
Dimensions: coffin – length: 156 cm, width: 45 cm, height: 30 cm; lid – damaged and deformed during a robbery.
Orientation: west-east, with 12° deviation from west to south.
Grave construction: brick construction.

The lead coffin was placed inside a grave construction made with walls of four rows of bricks bonded with mud mortar, a cover of bricks damaged during a robbery and a floor of tegulae. The coffin was not decorated. The bones have not been preserved.

Inventory: no inventory.

Literature: Milovanović, Mrđić, Kosanović 2019, 99–100, fig. 4a.

8. *Viminacium*, "Rit" site
trench 230, G-92; C-2324 (Pl. IX/2)

Material and workmanship: lead, casting, damaged.
Dimensions: unknown, only fragments of a coffin are preserved.
Orientation: north-south, with 14° deviation from north to east.
Grave construction: brick construction.

The lead coffin was placed in a grave construction with walls made of five bricks, bonded with earth-lime mortar while the cover, made of bricks positioned in steps and bound using lime mortar, has been preserved in four rows. The fragments of the lid and coffin were inside the grave. The coffin was not decorated. The bones have not been preserved.

Inventory: no inventory.

Literature: Milovanović, Mrđić, Kosanović 2019, 99–100, fig. 4b.

9. *Viminacium*, "Rit" site
trench 230, G-118; C-2409 (Pl. X/1)

Material and workmanship: lead, casting.
Dimensions: coffin – length: 124 cm, width: 36 cm, height: 26 cm; lid – damaged and deformed during the robbery.
Orientation: east-west, with14° deviation from west to north.
Grave construction: no construction.

The lead coffin was placed in a pit. On the preserved part of the lid, there is a decoration in the shape of a square formed by astragals (bead-and-reel) and the representation of a Centaur with arms in front of him (maybe with a bow and arrow?). All sides of the coffin have folded edges, about 2–3 cm wide. One longitudinal side is decorated with three figures along its length – two animals in chase (canines or felines?), and a Centaur, identical to the one on the lid, in the middle. The other longitudinal side is not decorated. The same animal in chase is shown on both lateral sides. The dislocated bones of a young person were found inside the coffin.

Inventory: no inventory.

Literature: Milovanović, Mrđić, Kosanović 2019, 99–100, fig. 4c.

10. *Viminacium*, "Pećine" site
trench 558, G-5910; C-14214 (Pl. X/2)

Material and workmanship: lead, casting; damaged.
Dimensions: coffin – length: 90 cm, width: 30 cm, height: 22 cm; lid – damaged and partially dislocated.
Orientation: north-south, with 4° deviation from north to east.
Grave construction: brick construction.

The lead coffin of the child was placed in a grave construction made of bricks, with longitudinal sides consisting of two vertically placed (slightly inclined) tegulae, lateral sides formed of a single vertical tegula each, three sides surrounding the grave space covered with bricks, and the floor made of two bricks. The cover is not preserved. The bricks are bound with earth. The lid was decorated with the row of triangles (spikes) along both lateral edges, and two crossed lines having arrows

(spikes) at the ends next to the triangles. The longitudinal sides of the coffin are decorated with the row of triangles (spikes) near the bottom edge, and two crossed lines near the edges of both sides. The lateral sides have crossed lines with arrows (spikes) at the ends and a row of variously oriented triangles (spikes) below the top edge. The dislocated bones of a child were found inside the coffin.

Inventory: no inventory.

11. *Viminacium*, "Pećine" site
trench 678, G-6024; C-14571 (Pl. XI/1)

Material and workmanship: lead, casting; damaged.
Dimensions: fragmented coffin – length: 155 cm; width: 30 cm; lid – not preserved.
Orientation: north-south.
Grave construction: no construction.

The lead coffin was placed in a pit. Both the coffin and its lid were damaged and deformed by the work of machines in the area of the thermal power plant. They were not decorated. Five iron wedges were found under the coffin, which might have belonged to the wooden structure on which the coffin was placed. Wedges of smaller dimensions (up to 2 cm long) were found east of the coffin, while similar ones were nailed into the coffin and served to fix the lid. The bones of the deceased are fragmented and dislocated.

Inventory:

1. A prismatic glass bottle with a square cross-section and a flat base; made of greenish glass; dimensions – height: 163 mm, width: 67 mm, (C-14558). Pl. XI/2

2. A prismatic glass bottle with wide mouth, thickened rim, short and cylindrical neck, a recipient of square cross-section, and a flat base; the base is decorated with five small circular indentations, in the middle and in each corner; made of greenish glass; dimensions – base: 63 x 61 mm; height: 120 mm, (C-14559).

Literature: Данковић, Марјановић 2022, 273, кат. 58. Pl. XI/3

3. A glass cup with wide mouth, thickened rim, a spherical recipient and flat base; made of greenish glass; dimensions – height: 39 mm, (C-14560). Pl. XI/7

4. A glass *balsamarium* with wide mouth, thickened rim, cylindrical neck, and a conical recipient; made of blue-green glass; dimensions – height: 91 mm, (C-14561). Pl. XI/5

5. A prismatic glass bottle with wide mouth, thickened rim, a recipient of square cross-section, and flat base decorated with concentric circles; made of greenish glass; dimensions – height: 97 mm, (C-14562).

Literature: Данковић, Марјановић 2022, 277, кат. 64. Pl. XI/4

6. One half of a seashell; dimensions – 56 mm x 56 mm, (C-14563).

Literature: Данковић, Марјановић 2022, 265, кат. 44. Pl. XI/8

7. Fragments of a chest – iron hoops, wedges and clamps; dimensions: 16–36 mm, (C-14564). Pl. XI/10

8. A bronze coin of Domitian 85/86 AD; dimensions – diameter: 27 mm, (C-14565). Pl. XI/11

9. Fragments of a chest – bronze handle, lock, plates; dimensions – handle: 67 mm x 35 mm, lock: 60 mm x 14 mm, (C-14566). Pl. XI/9

10. A glass *balsamarium* with wide mouth, thickened rim, cylindrical neck, and a short conical recipient; made of bluish glass; dimensions – height: 152 mm, (C-14567).

Literature: Данковић, Марјановић 2022, 271, кат. 54. Pl. XI/6

11. Fragments of an ivory object for unwinding papyrus; a flat object in the shape of a pelta with two square bone sticks; dimensions – flat plaque: 110 mm x 80 mm x 15 mm, sticks: 127 mm x 11 mm, (C-14568 and C-14569). Pl. XI/13

12. A bone spatula, three sewing needles and over 50 whole and fragmented bone hairpins; dimensions – spatula: length 115 mm, sewing needles: length 94–100 mm, hairpins: length 75–105 mm, (C-14570). Pl. XI/12

13. A ceramic oil lamp of the *Firmalampen* type; a circular flat discus and concave base; the discus decorated with the image of a theatrical mask, and an eccentrically positioned hole; three bulges on the shoulder; a stamp of FORTIS framed with concentric circles on the base; red fired and coloured red; dimensions – length: 97 mm, height: 32 mm, (C-14572). Pl. XI/14

12. *Viminacium*, "Pirivoj" site
trench 42, room I; G-436; C-1395 (Pl. XI/15)

Material and workmanship: lead, casting; damaged, without the lid.
Dimensions: coffin – length: 192 cm, width: 70 cm, height: 46 cm; lid – not preserved.
Orientation: west-east with 22° deviation from west to north.
Grave construction: brick construction.

The lead coffin was placed inside a grave construction with walls made of seven rows of bricks bound and plastered with lime mortar, while the floor under the coffin was formed of bricks, additionally extending below

and out of the walls of the grave. The cover has not been preserved. Both longitudinal sides and one lateral side of the coffin are decorated with the same ornament, consisting of twisted ropes on the bottom and top edges and crossed double twisted ropes forming squares with inscribed astragals (bead-and-reel), creating six-pointed stars. The other lateral side is most damaged, and only the twisted rope is visible on the bottom, but is can be assumed that the decoration was the same as the that on the three more preserved sides. The dislocated bones of the deceased were discovered inside the coffin.

INVENTORY:

1. A fragmented bone sewing needle; dimensions – length: 93 mm, (C-1396). Pl. XI/16

Literature: Danković, Milovanović, Mikić 2018, 38, fig. 4.

BIBLIOGRAPHY:

Aufderheide *et al.* 1998 – A. C. Aufderheide, C. Rodríguez-Martín, O. Langsjoen, *The Cambridge Encyclopaedia of Human Paleopathology*, Cambridge: University Press 1998.

Becatti 1955 – G. Becatti, *Oreficerie antiche dalle minoiche alle barbariche*, Roma 1955.

Bertin 1974 – A.M. Bertin, Les sarcophages en plomb Syriens au Musée du Louvre, *Revue Archéologique* 1, Paris 1974, 43–82.

Chéhab 1935 – M. Chéhab, Sarcophages en plomb du Musée National Libanais, *Syria* XVI, 1935, 51–72.

Cochet 1978 – A. Cochet, Les Sarcophages de plomb du Musée de Rouen, *Actes du Colloque International d'Archèologie Rouen 3–4–5 Juillet 1975*, Rouen 1978, 217–233.

Cochet 1982 – A. Cochet, Note sur le sarchophage d'enfant, en plomb, découvert a la Boisse en 1980, *Revue archéologique del'Est et du Centre-Est* 33, 1982, 139–141.

Цуњак, Марковић-Николић 1997 – М. Цуњак, Љ. Марковић-Николић, *Античке и средњевековне некрополе Смедерева*, Смедерево 1997 (M. Cunjak, Lj. Marković-Nikolić, Antičke i srednjevekovne nekropole Smedereva, Smederevo 1997).

Данковић, Миловановић 2022 – И. Данковић, Позивам те, Thobarrabau. Магијска пракса у Виминацијуму/I summon thee, Thobarrabau. Magical practice in Viminacium, M. Vojvoda, I. Danković, B. Milovanović (ur.), *Vivere in Urbe, Viminacium, Том* 1, Београд 2022, 57–97.

Данковић, Марјановић 2022 – И. Данковић, М. Марјановић, Жена, супруга, мајка: Свакодневница становница Виминацијума/Woman, Wife, Mother: Everyday life of femal residents in Viminacium, M. Vojvoda, I. Danković, B. Milovanović (ur.), *Vivere in Urbe, Viminacium, Том 1*, Београд 2022, 203–287.

Миловановић, Реџић 2022 – Б. Миловановић, С. Реџић, Накит и фибуле: Између функционалности, естетске вредности и статусног симбола/Jewellery and brooches: Between functionality, aesthetic, and status symbol M. Vojvoda, I. Danković, B. Milovanović (ur.), *Vivere in Urbe, Viminacium, Том 1*, Београд 2022, 285–426.

Danković, Milovanović, Mikić 2018 – I. Danković, B. Milovanović, I. Mikić, Zaštitna arheološka iskopavanja na lokalitetu Pirivoj (Viminacium) 2016. godine, I. Bugarski, N. Gavrilović Vitas, V. Filipović (ur.), *Arheologija u Srbiji, projekti Arheološkog instituta u 2016. godini*, Beograd 2018, 35–42.

Ferembach, Schwidetsky, Stloukal 1980 – D. Ferembach, I. Schwidetsky, M. Stloukal, Recommendations for Age and Sex Determination, *Journal of Human Evolution* 7, 1980, 517–594.

Глумац 2015 – М. Глумац, *Римска некропола Губеревац–Гомилице на Космају. Социјална структура становништва I од III до века*. Филозофски факултет у Београду, непубликована докторска дисертација, Београд 2015 (M. Glumac, *Rimska nekropola Guberevac–Gomilice na Kosmaju. Socijalna stuktura stanovništva od I do III veka.* Filozofski fakultet u Beogradu, nepublikovana doktorska disertacija, Beograd 2015).

Голубовић 2000 – С. Голубовић, Обућа из триконхалне гробнице са Виминацијума, *Viminacium* 11, Пожаревац 2000, 83–100 (S. Golubović, Obuća iz trikonhalne grobnice sa Viminacijuma, *Viminacium* 11, Požarevac 2000, 83–100).

Голубовић 2001 – С. Голубовић, Прилог проучавању оловних саркофага у Горњој Мезији, *Viminacium* 12, Пожаревац 2001, 135–158 (S. Golubović, Prilog proučavanju olovnih sarkofaga u Gornjoj Meziji, Viminacium 12, Požarevac 2001, 135–158).

Golubović 2002 – S. Golubović, Decorated lead sarcophagi in Moesia Superior, *Proceedings of the XVIIIth International Congress of Roman Frontier Studies held in Amman, Jordan (2000)*, Volume II, (ed.) P. Freeman, J. Bennett, Z. T. Fiema and B. Hoffmann, 2002, 629–640.

Golubović, Milovanović, Redžić 2022 – S. Golubović, B. Milovanović, S. Redžić, *Viminacium – Lokalitet Pećine, nekropola oko južne gradske komunikacije*, Beograd 2022.

Harris, Zucker 2015 – Cite this page as: Dr. Beth Harris and Dr. Steven Zucker, „*Pair of Centaurs Fighting Cats of Prey* from Hadrian's Villa", in *Smarthistory*, November 28, 2015, accessed September 21, 2023 https://smarthistory.org/pair-of-centaurs-fighting-cats-of-prey-from-hadrians-villa/.

Isings 1957 – C. Isings, *Roman Glass from Dated Finds*, Groningen 1957.

Jovanović 2000 – A. Jovanović, Romanization and ethnic elements in burial practice in the southern part of Pannonia Inferior and Moesia Superior, in: ed. John Pearce, *Burial, Society and Context in the Roman World,* Oxford 2000, 204–214.

Khader, Abed 2006 – B. Khader, A. B. Abed, *Tunisian Mosaics: Treasures from Roman Africa*, Los Angeles: Getty Conservation Institute 2006.

Korać, Golubović 2009 – M. Korać, S. Golubović, *Viminacium–Više grobalja 2*, Beograd 2009.

Korać, Mikić 2014 – M. Korać, Ž. Mikić, *Antropološka kolekcija Viminacium I – nekropola Pećine,* Beograd 2014.

Korać, Ricl 2017 – M. Korać, M. Ricl, New Gold and Silver Amulets from Moesia Superior (Serbia), *Zeitschrift für Papyrologie und Epigraphik* 203 (2017), 164–176.

Korać 2018 – M. Korać, *Oil-Lamps from Viminacium (Moesia Superior)*, Volume II, Belgrade 2018.

Lovejoy, C. O. 1985 – C. O. Lovejoy, Dental Wear in the Libben Population: Its Functional Patterns and Role in the Determination of Adult Age at Death, *American Journal of Physical Anthropology* 68, 1985, 47–56.

Lovejoy et al. 1985 – C. O. Lovejoy et al. Chronological metamorphosis of the auricular surface of ilium, A new method for determination of skeletal age at death, *American Journal of Physical Anthropology* 68, 1985, 15–28.

Миловановић 2007 – Б. Миловановић, *Налази наушница у римским провинцијама на територији Србије*, Београд 2007 (B. Milovanović, *Nalazi naušnica u rimskim provincijama na teritoriji Srbije*, Beograd 2007).

Milovanović 2017 – B. Milovanović, *Rudarsko metalurški kompleksi i predmeti od olova u rimskim provincijama na tlu Srbije/Mining and Metallurgy Lead Complexes and Finds in the Roman Provincies at the Territory of Serbia*, Beograd 2017.

Milovanović, Redžić, Jovičić 2017 – B. Milovanović, S. Redžić, M. Jovičić, Arheološka istraživanja na lokalitetu Rit (Viminacijum) u 2015. godini, I. Bugarski, N. Gavrilović Vitas, V. Filipović (ur.), *Arheologija u Srbiji, projekti Arheološkog instituta u 2015. godini*, Beograd 2017, 71–76.

Milovanović 2018 – B. Milovanović, Jewellery as a Symbol of Prestige, Power and Wealth of the Citizens of Viminacium, S. Golubović, N. Mrđić (ed.), *Vivere Militare est, From Populus to Emperors – Living on the Frontier*, Volume II, Belgrade 2018, 101–141.

Milovanović, Mrđić, Kosanović 2019 – B. Milovanović, N. Mrđić, I. Kosanović, Arheološka istraživanja na lokalitetu Rit (Viminaci jum) u 2017. godini, I. Bugarski, V. Filipović, N. Gavrilović Vitas, (ur.), *Arheologija u Srbiji, projekti Arheološkog instituta u 2017. godini*, Beograd 2019, 97–108.

Миловановић, Реџић 2022 – Б. Миловановић, С. Реџић, Накит и фибуле: Између функционалности, естетске вредности и статусног симбола/Jewellery and brooches: Between functionality, aesthetic, and status symbol M. Војвода, И. Данковић, Б. Миловановић (ур.) *Vivere in Urbe. Viminacium, Том 1*, Београд 2022, 285–426.

Mikić 1978 – Ž. Mikić, O antropološkoj metodologiji terenske obrade skeletnih nalaza. *Godišnjak Centra za balkanološka ispitivanja ANUBiH* 16/14, 1978, 3–44; 201–242.

Mirković 1968 – M. Mirković, *Rimski gradovi na Dunavu u Gornjoj Meziji*, Beograd 1968.

Mirković 1986 – M. Mirković, *Inscriptions de la Mésie supérieure II*, *Viminacium et Margum,* Beograd 1986.

Ortner 2003 – D. J. Ortner, *Identification of Pathological Conditions in Human Skeletal Remains* (second edition), Amsterdam, Boston, London, New York, Oxford, Pariz, San Diego, San Francisco, Singapure, Sydney, Tokyo: Academic Press 2003.

Nikolić-Đorđević 2000 – S. Nikolić-Đorđević, Antička keramika Singidunuma, *Singidunum* 2, Beograd 2000, 11–245.

Поп-Лазић, Јовановић, Мркобрад 1992 – П. Поп-Лазић, А. Јовановић, Д. Мркобрад, Нови археолошки налази на јужним обронцима Космаја, *Гласник Српског археолошког друштва* 8, 1992, 135–143 (P. Pop-Lazić, A. Jovanović, D. Mrkobrad, Novi arheološki nalazi na južnim obroncima Kosmaja, *Glasnik Srpskog arheološkog društva* 8, 1992, 135–143).

Поповић 1992 – И. Поповић, Радионица оловних предмета или светилиште култа дунавских коњаника у Виминацијуму, *Viminacium* 7, 29–56 (I. Popović, Radionica olovnih predmeta ili svetilište kulta dunavskih konjanika u Viminacijumu, *Viminacium* 7, 29–56).

Поповћ 2001 – И. Поповић, *Касноантички и рановизантијски накит од злата у Народном музеју у Београду/Late Roman and Byzantine Gold Jewelry in National Museum in Belgrade*, Београд 2001 (I. Popović, *Kasnoantički i ranovizantijski nakit od zlata u Narodnom muzeju u Beogradu/Late Roman and Byzantine Gold Jewelry in National Museum in Belgrade,* Beograd 2001).

Rahmani 1976 – L. Y. Rahmani, Roman Tombs in Nahal Raqafot, Jerusalem, *Antiqot* XI, 1976, 77–88.

Rahmani 1987 – L. Y. Rahmani, More lead coffins from Israel, *Israel Exploration Journal* 37/2–3, 1987, 145–147.

Rahmani 1988 – L.Y. Rahmani, Roman Lead Coffins in the Israel Museum Collection, *The Israel Museum Journal* 25, Jerusalem 1988, 47–60.

Redžić, Danković 2012 – S. Redžić, I. Danković, Istraživanja funerarnih celina na lokaciji Nad Klepečkom, V. Bikić, S. Golubović, D. Antonović (ur.), *Arheologija u Srbiji, projekti Arheološkog instituta u 2011. godini*, Beograd 2012, 54–57.

Redžić, Jovičić, Danković 2014 – S. Redžić, M. Jovičić, I. Danković, Iskopavanja na lokalitetu Nad Klepečkom (Viminacijum), D. Antonović, S. Golubović, V. Bikić (ur.), *Arheologija u Srbiji, projekti Arheološkog instituta u 2012. godini*, Beograd 2014, 62–65.

Redžić, Jovičić, Mrđi, Rogić 2018 – S. Redžić, M. Jovičić, N. Mrđić, D. Rogić, Zaštitna arheološka iskopavanja na lokalitetu Pećine (Viminacijum) 2016. godine, I. Bugarski, N. Gavrilović Vitas, V. Filipović (ur.), *Arheologija u Srbiji, projekti Arheološkog instituta u 2016. godini*, Beograd 2018, 79–90.

Riha 1990 – E. Riha, *Der römische Schmuck aus Augst und Kaiseraugst*, August, 1990.

Ruseva-Slokoska 1991 – Lj. Ruseva-Slokoska, *Roman Jewellery: A collection of the National Museum*, Sofia 1991.

Ružić 1994 – M. A. Ružić, *Rimsko staklo u Srbiji,* Beograd 1994.

Santrot, Frugier 1982 – J. Santrot, D. Frugier, Sarcophage en plomb ouvragé découvert a Cenon (Gironde), *Gallia* 40, 271–286.

Schutkowski, 1993 – H. Schutkowski, Sex determination of infant and juvenile skeletons: I. Morphometric features, *American Journal of Physical Anthropology* 90, 199–205.

Спасић-Ђурић 2015 – Д. Спасић-Ђурић, *Град Виминацијум*, Пожаревац 2015 (D. Spasić-Đurić, *Grad Viminacijum*, Požarevac 2015).

Trotter, Gleser 1952 – M. Trotter, G. C. Gleser, Estimation of stature from long bones of American whites and Negroes, *American Journal of Physical Anthropology* 10, 463–514.

Ubelaker 1965 – D. H. Ubelaker, *Human skeletal remains. Excavation, analysis, interpretation*, 2 Edition, Taraxacum, Washington DC, 1965.

Vojvoda, Mrđić 2017 – M. Vojvoda, N. Mrđić, *Nalazi novca sa viminacijumske nekropole Pećine i njihova uloga u pogrebnom ritualu*/*Coin Finds from the Viminacium Necropolis of Pećine and their Role in Funerary Ritual*, Beograd 2017.

Vojvoda 2018 – M. D. Vojvoda, Perforated Coins from Graves at the Viminacium Necropolis of Pećine, *Старинар* LXVIII, 2018, 65–87.

Vojvoda, Anđelković Grašar 2018 – M. Vojvoda, J. Anđelković Grašar, Виминацијум – историјат истраживања/ Viminacium – history and research, (ed.) M. Vojvoda, I. Danković, B. Milovanović, *Vivere in Urbe, Viminacium, Vol. 1*, Beograd 2022, 9–19.

Wood 2001 – S. Wood, Literacy in the Early Empire: A Papyrus-Roll Winder from Pompeii, *Memoirs of the American Academy in Rome*, Vol. 46, 2001, 23–40.

Zotović 1984 – LJ. Zotović, Prilog problemu etničke pripadnosti grobova tipa Mala Kopašnica–Sase, *Simpozium Duhovna kultura Ilira*, Herceg Novi, 4–6, Sarajevo 1984, 166.

Зотовић, Јордовић 1990 – Љ. Зотовић, Ч. Јордовић, *Viminacium I, некропола Више гробаља*, Београд 1990 (Lj. Zotović, Č. Jordović, *Viminacium I, nekropola Više grobalja,* Beograd 1990).

Šlaus 2006 – Šlaus, M., *Bioarheologija-demografija, zdravlje, traume i prehrana starohrvatskih populacija,* Školska knjiga, Zagreb 2006.

Резиме: БЕБИНА МИЛОВАНОВИЋ, Археолошки институт, Београд
СНЕЖАНА ГОЛУБОВИЋ, Археолошки институт, Београд
ИЛИЈА МИКИЋ, Археолошки институт, Београд

НЕДАВНО ОТКРИВЕНИ ОЛОВНИ КОВЧЕЗИ ИЗ ВИМИНАЦИЈУМА (ГОРЊА МЕЗИЈА)

Кључне речи. – олово, ковчег, гроб, Виминацијум, украс, накит, посуде, антрополошка анализа

Током недавних археолошких истраживања на некрополама Виминацијума су пронађена дванаест саркофага од олова која до сада нису публикована. Саркофази су директно полагани у гробну раку или у гроб озидан од вертикално или хоризонтално сложених опека које су повезане блатним или кречним малтером. Скелетно сахрањени покојници у саркофазима од олова на Виминацијуму су присутни од 2. до средине 4. века. Од дванаест саркофага, девет садрже рељефну декорацију на поклопцу или на поклопцу и ковчегу. Међу мотивима доминирају линеарно-геометријски, међу којима се издвајају укрштене линије, правоугаоници и квадрати (некад неправилно постављени попут ромбова). Изведени су у мотиву ужади или у облику перли, односно астрагала. Фигурални прикази су представљени само на једном саркофагу и чине их четвороножне животиње у трку (из породице дивљих мачака) и Кентаур. Бројни налази предмета од олова на Виминацијуму сведоче о постојању локалне радионице у самом граду, иако она није археолошки потврђена. Скромна декорација саркофага, која није захтевала врхунско умеће, такође иде у прилог овој тврдњи. Ипак, не треба занемарити утицаје из малоазијских радионица које су ширили досељеници са тих простора. Гробни инвентар је нађен у седам ковчега од којих су три била неоштећена са потпуно сачуваним гробним инвентаром, док су преостала четири оштећена механизацијом или од стране пљачкаша, стога је гробни инвентар делимично сачуван. Међу прилозима се издвајају: накит од злата, сребрна ламела, посуде од стакла и керамике, укоснице од кости, предмет од слоноваче који је припадао прибору за писање и коришћен је за одмотавање и придржавање папируса приликом читања, као и новац од бронзе.

На основу антрополошке анализе скелета утврђено је да се у шест случајева ради о покојницима дечјег узраста, а у три случаја о одраслим особама. Одрасле особе су заступљене са по једним покојником женског и мушког пола док је код дечјег узраста пол прецизније утврђен само на три скелета и они припадају женском полу. У свим анализираним ковчезима је сахрањен по један покојник. Приликом посматрања палеопатолошког статуса константовани су трагови свакодневних активности на костима само у три случаја, и то код одраслих особа. На првом месту, Шморлови дефекти би могли указати на одређени физички рад. Скелетни остаци покојника дечјег узраста нису нам пружили довољно података на основу којих би се могло утврдити њихово некадашње здравствено стање. Нешто одређеније информације би могле да пруже анализе древне ДНК или изотопских односа, које би употпуниле археолошку интерпретацију сахрањивања покојника на овај начин. Намера нам је да даља истраживања буду усмерена пре свега на наведене анализе које ће нам дати одговоре на бројне недоумице у вези са покојницима сахрањиваним у ковчезима од олова.

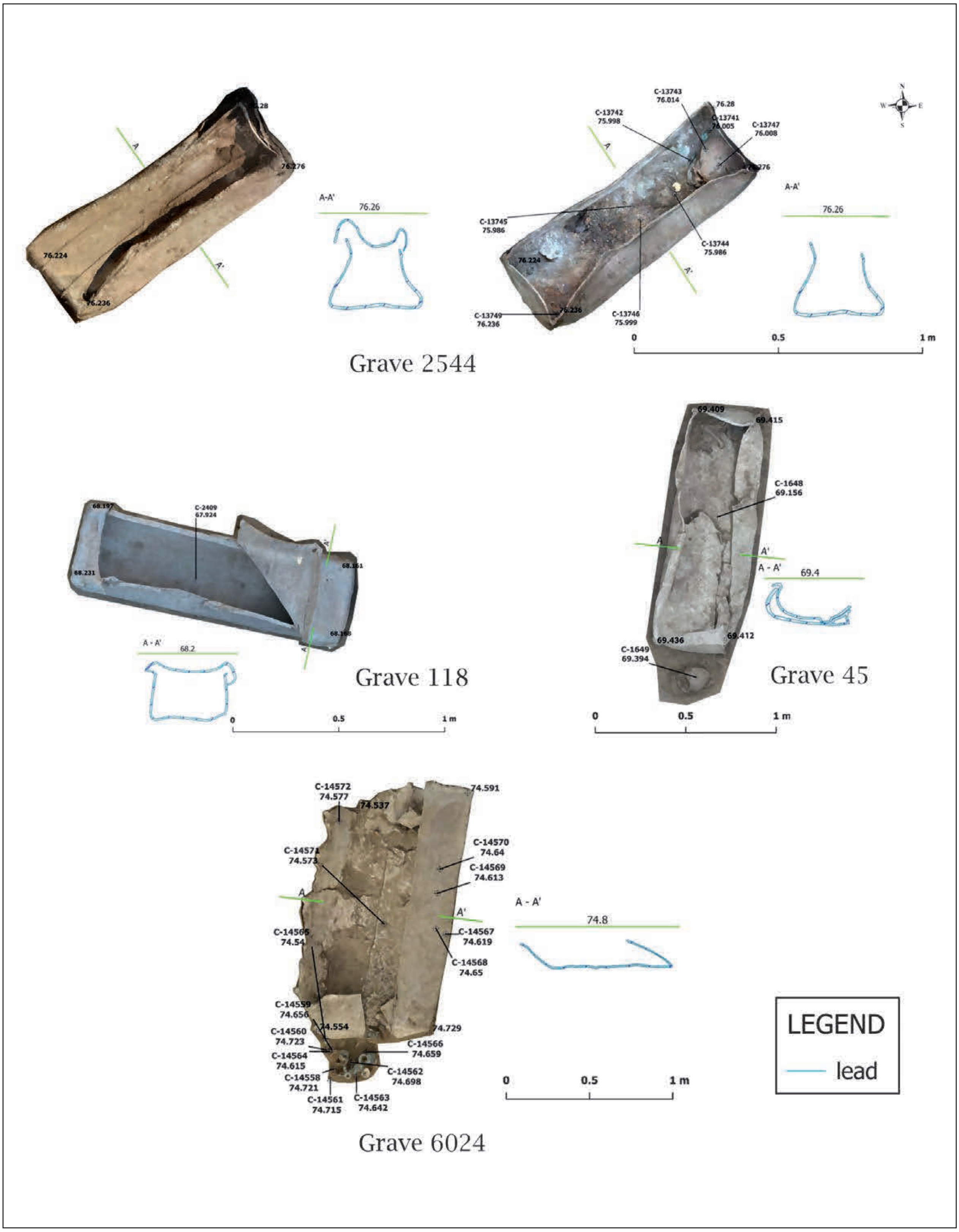


***Plate I** – Lead coffins in grave earth pit (photogrammetry I. Marjanović, I. Milošević)*

***Табла I** – Оловни ковчези у гробним земљаним ракама (фотограметрија: И. Марјановић, И. Милошевић)*

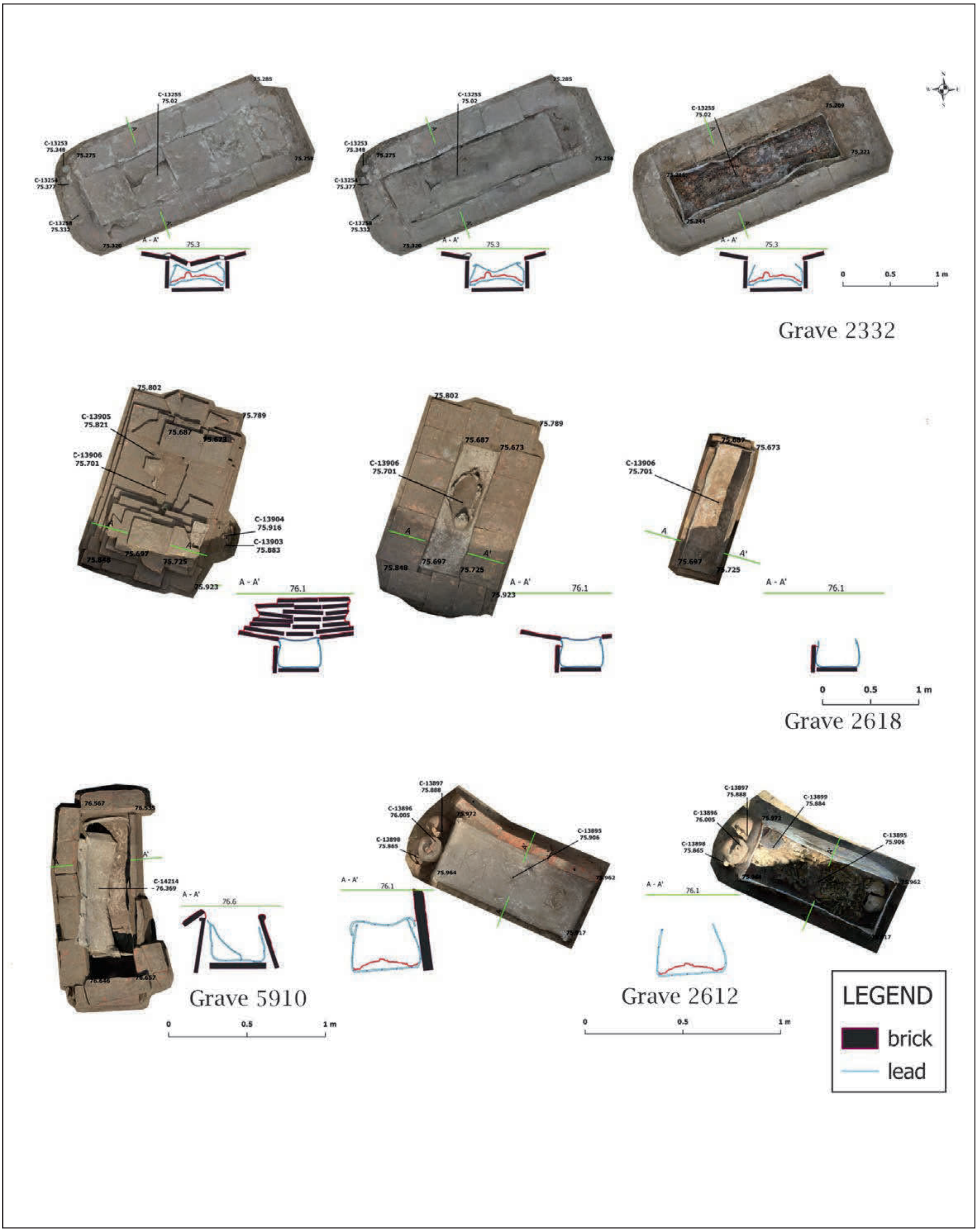


Plate II *– Lead coffins in graves with construction of vertically placed bricks (photogrammetry I. Marjanović, I. Milošević)*

Табла II *– Оловни ковчези у гробовима са конструкцијом од вертикално постављених опека (фотограметрија: И. Марјановић, И. Милошевић)*

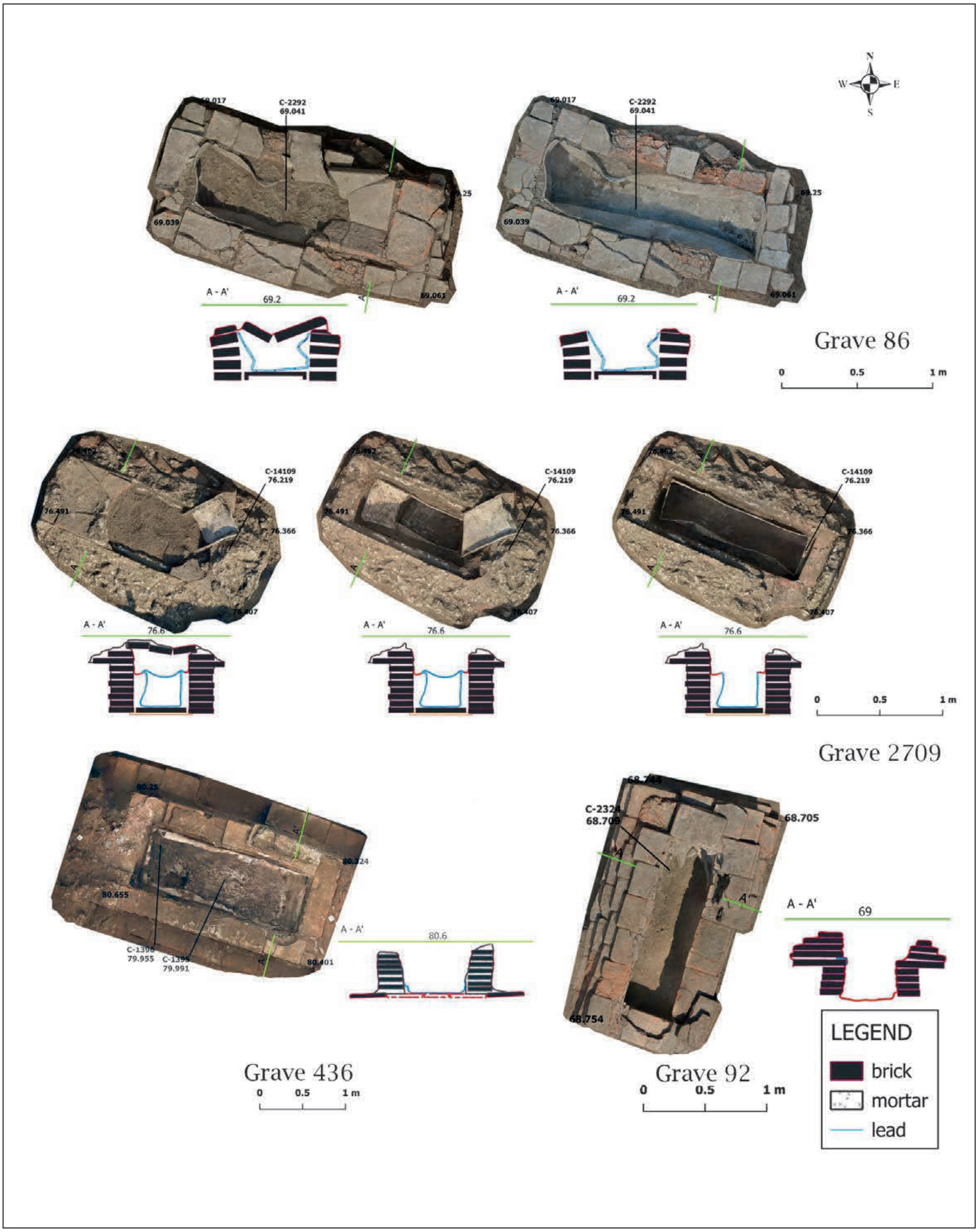


***Plate III** – Lead coffins in graves with construction of horizontally placed bricks (photogrammetry I. Marjanović, I. Milošević)*

***Табла III** – Оловни ковчези у гробовима са конструкцијом од хоризонтално постављених опека (фотограметрија: И. Марјановић, И. Милошевић)*



Plate IV *– 1. The lead coffin from grave 2332; 2–3. Ceramic beakers; 4. Shoe nails (photo G. Stojić)*

Табла IV *– 1. Оловни ковчеī из īроба 2332; 2–3. Пехари од керамике; 4. Шунеīле (фоūо: Г. Сūојић)*



Plate V *– 1. The lead coffin from grave 2544; 2. A pelta-shaped pendant; 3. An earring; 4. A snake-shaped finger-ring; 5. Two finger rings connected with a smaller ring; 6. A bronze coin of Faustina I; 7. A bronze coin from the first half of the 2nd century (photo G. Stojić)*

Табла V *– 1. Оловни ковчеī из īроба 2544; 2. Привезак у облику йелūе; 3. Наушница; 4. Прсūен у облику змије; 5. Два ūрсūена ūовезана мањом алком; 6. Бронзани новац Фаусūине I; 7. Бронзани новац из ūрве ūоловине 2. века (фоūо: Г. Сūојић)*



Plate VI *– 1. The lead coffin from grave 2612; 2–4. Ceramic jugs; 5. Ceramic pot (photo G. Stojić)*

Табла VI *– 1. Оловни ковчеī из īроба 2612; 2–4. Крчази од керамике; 5. Керамички лонац (фоūо Г. Сūојић)*



Plate VII *– 1. The lead coffin from grave 2618; 2. A bone needle (photo G. Stojić)*

Табла VII *– 1. Оловни ковчеī из īроба 2618; 2. Кошīана иīла (фоīо: Г. Сīојић)*



Plate VIII *– 1. The lead coffin from grave 2709; 2. The lead coffin from grave 45; 3. Ceramic pot (photo G. Stojić)*

Табла VIII *– 1. Оловни ковчеī из īроба 2709; 2. Оловни ковчеī из īроба 45; 3. Керамички лонац (фоūо: Г. Сūојић)*



Plate IX *– 1. The lead coffin from grave 86; 2. The fragments of a lead coffin from grave 92 (photo G. Stojić)*

Табла IX *– 1. Оловни ковчеī из īроба 86; 2. Фраīменūи оловноī ковчеīа из īроба 92 (фоūо: Г. Сūојић)*



1

2

Plate X *– 1. The lead coffin from grave 118; 2. The lead coffin from grave 5910 (photo G. Stojić)*

Табла X *– 1. Оловни ковчеī из īроба 118; 2. Оловни ковчеī из īроба 5910 (фоīо: Г. Сīојић)*



Plate XI *– 1. The lead coffin from grave 6024; 2–4. Prismatic glass bottles; 5–6. Toilet bottles (balsamarium); 7. A glass cup; 8. One half of a seashell; 9. Fragments of a chest (bronze handle, lock and plates); 10. Fragments of a chest (iron hoops, wedges and clamps); 11. A bronze coin of Domitian; 12. A bone spatula, sewing needles and bone hairpins; 13. An ivory object with two square bone sticks; 14. A ceramic oil lamp; 15. The lead coffin from grave 436; 16. A bone sewing needle (photo G. Stojić)*

Табла XI *– 1. Оловни ковчег из гроба 6024; 2–4. Призматичне боце од стакла; 5–6. Тоалетне боце (балсамаријум); 7. Пехар од стакла; 8. Половина љуштуре морске шкољке; 9. Фрагменти ковчега (дршка од бронзе, брава, оплате); 10. Фрагменти ковчега (алке од гвожђа, клинови и спеге); 11. Бронзани новац Домицијана; 12. Коштана спатула, шиваће игле и укоснице од кости; 13. Предмет од слоноваче са два коштана штапића; 14. Керамичка уљана лампа; 15. Оловни ковчег из гроба 436; 16. Коштана шиваћа игла (фото: Г. Стојић)*

UDC: 904:7.046.1"652"(497)

https://doi.org/10.2298/STA2373121G
Original research article

NADEŽDA GAVRILOVIĆ VITAS, Institute of Archaeology, Belgrade
JELENA ANĐELKOVIĆ GRAŠAR, Institute of Archaeology, Belgrade

NIKE/VICTORIA REPRESENTATIONS IN LATE ANTIQUE CENTRAL BALKANS

e-mail: nadia011@yahoo.com

Abstract. – During the archaeological excavations in the north-eastern part of the *thermae* at Constantine the Great's villa in Mediana, in the 2022 campaign, in a layer of debris two fragments of marble relief with a representation of Nike/Victoria standing on a globe were discovered. The fine grain white marble used for the icon, with its exquisite modelling, suggest that it was made from expensive marble by the hands of a skilful artisan in the period from the 3rd to the 4th century. The fact that the relief was discovered in the area of an imperial residential complex relates it to other known Central Balkan finds with Victoria representations, discovered in Galerius' imperial domain Felix Romuliana and Moesia Superior's capital Viminacium. All these mythological objects can be dated into the period of the 3rd and the 4th century, attesting that the goddess' symbolism did not lose any of its popularity in the period of Late Antiquity – on the contrary, it announced the transformation of the goddess into an angel and, later on, as the one who blessed the emperors during their coronation. Thus, the question of Victoria's different roles (goddess or personification) again arises, gaining a new meaning in the early Byzantine period.

Key words. – Nike, Victoria, marble relief, statue, wreath, victory, Late Antiquity

---

During archaeological excavations in 2022. with the goal to obtain data important for the conservation works which were to follow, in the northern part of the *thermae* of Constantine the Great's villa with peristyle, in a layer of debris discovered north of the apse of room 8 of the *thermae*, a fragmented relief of white marble was discovered (Fig. 1).[1] The layer of debris consisted of thick soil with fragments of stone, marble, ceramic and glass. The two marble fragments represent the middle and lower part of the plate and are well preserved.[2] The iconographic presentation is framed by a double moulding and represents the lower part of a figure dressed in a flowing himation, which covers its left leg, while leaving the right leg uncovered; the figure is standing on a globe. Although the representation of the figure is not complete, it could be said with some certainty that the figure in question represents the goddess Victoria who was often shown in an identical pose – standing with one leg on a globe, her richly plaited dress flowing, and frequently with one leg uncovered. In her hands, the goddess usually holds a palm branch and a wreath, which we can presume was the way in which she was also depicted in the Mediana relief. This particular

---

[1] The archaeological excavations were conducted from the 20th September to the 19th October 2022, with the goal of finishing the research of the three northern rooms of the *thermae,* due to the conservation works which were to follow afterwards. The members of the excavation team were: Dr Nadežda Gavrilović Vitas, director of archaeological research (Institute of Archaeology Belgrade), MA Marija Jović (Institute of Archaeology Belgrade), Dr Igor Bjelić architect (Institute of Archaeology Belgrade), Dr Gordana Milošević Jevtić consultant (Faculty of Architecture Belgrade), Slobodan Mitić (National Museum in Niš) and Željko Cajić photographer (National Museum in Niš).

[2] Dimensions of the bigger fragment of the marble votive icon are 18 x 13.5 x 2.5 cm, while the smaller fragment of the icon measures 12 x 6.5 x 2.5 cm, documentation of the Institute of Archaeology Belgrade.

Manuscript received 29th January 2023, accepted 27th October 2023



Fig. 1. Marble icon with representation of Victoria on a globe, from Mediana (Photo: Ž. Cajić, National Museum Niš)

Сл. 1. Мермерна икона са представом Викторије на глобусу из Медијане (фотографија: Ж. Цајић, Народни музеј Ниш)

iconographical representation of the goddess Victoria standing on a half or full sphere or globe was very popular in Roman art and the introduction of the element of a sphere or globe should be considered as a Latin addition, since it is almost non-existent in Hellenistic period artefacts.[3] Victoria has always been associated with victorious battles, which were limited in time and space, while the concept of political power, towards which the Roman state strived, involved a long term plan that needed a clear manifestation and its visual communication, and single military victories or victorious individuals were insufficient for this purpose. In such a way, the motif of a *tropaion* (trophy) needed to be upgraded into the more powerful symbol of the *orbis Romanus* and its expansion from a city state to vast territorial power – Victoria on the globe, whose image was widely adopted in all realms of public and private life, from state monuments to small objects of everyday life.[4] The iconographic variant of Victoria standing on a globe was introduced to Rome by Augustus, who brought a similar statue of the goddess from Tarentum to commemorate his victory at Actium. The statue of Victoria was then placed on an altar in the house of the Roman senate *Curia*[5] and in front of it, Roman senators took their oaths and prayed for the wellbeing of the emperor and Roman state[6], until probably 408, when the law against heathen statues

[3] Hölscher 1967, 22–47; Graillot 1919, 851.

[4] Hölscher 1967, 22–47, 180–182; Hölscher 2006, 27–48.

[5] Töpfer 2015, 11. A. Reinach writes that a statue of Victory was set up in Tarentum by Pyrrhus of Epirus to commemorate the victory over the Romans at Heraclea in 280 B.C. A. Reinach also suggests that the statue was modelled by a student of Lysippus, Eutychides of Sicyion. However, although Dio Cassius records that a statue of Victory was transferred from Tarentum to Rome, there are no historical sources that confirm the presence of the statue in Rome before 29 B.C. when it was placed by Augustus in the Curia Iulia, Pohlsander 1969, 589–590; Moustaka, Goulaki-Voutira, Grote 1992, 850–904; 882, no. 383.

[6] Sheridan 1966, 187.

was introduced.[7] Prudentius writes that the goddess' statue was made of gilded bronze, presenting the goddess with wings and in a flowing robe, standing on a globe with a laurel wreath in her right hand.[8] This iconographic type of Victoria presentation maintained its popularity through the antique and late antique period, with sub variants of Victoria standing on the ground, holding different attributes, such as a palm branch,[9] garland, a phiale/patera, a vase, *thymiterion*, a whip, etc.[10]

The find of a marble relief with representation of Victoria at Mediana's baths only contributes to our knowledge of mythological statues and sculptural groups that decorated rooms of the *thermae* of Constantine the Great's villa with peristyle: marble fragmented statue of a Satyr, marble statue of a lion, marble statuary composition of drunken Dionysus with a Satyr, marble sculptural group of Hercules with Telephos, fragmented marble base with part of the left foot,[11] marble female hand holding *a patera* with an egg (probably Hygieia), and a marble oversized male hand holding a sceptre (probably Zeus or the emperor).[12] Particularly interesting is a find of a fragment of a marble relief with the remains of mortar, discovered in one of the bath's rooms in 1962, on which a right hand holding a laurel wreath is presented.[13] The detail of a wing above the thumb of the hand implies another presentation of the goddess Victoria and that this marble relief was also decorating one of the rooms in Constantine the Great's baths.

As can be clearly seen from the previously written, the sculptural compositions depicting Hercules' heroic deeds, Dionysus with the members of his *thiasos* and the iatric goddess Hygieia were part of Mediana's *thermae* scenery, but also represented a common choice of deities for statues decorating other late antique *villae*.[14] In Late Antiquity, the particular choice of deities as part of an educated man's life (in literature, poetry, art, decoration of his house, etc.) presented a cultural trait that distinguished him from the average man. In short, it represented his common culture, origin and education – his *paideia*.[15] In that context, in late antique imperial domains and *villae*, Victoria's image presented in the form of statues or reliefs is not rare either – appearing at villae at La-Garenne-de-Nérac, Montmaurin and Lamarque.[16] The late antique torso of the goddess Victory from the villa at La-Garenne-de-Nérac was discovered in the *thermae* of the villa[17] and the choice of a goddess closely associated with the Roman emperor and the imperial family in general should not be surprising, bearing in mind the already established incorporation of Victoria into the domestic environment,[18] then additionally inspired by her image presented in public buildings (like, for instance, in

---

[7] In 403, Claudian writes that the statue of the goddess Victoria was again in the Roman Senate, but it was probably removed in 408 when the law against heathen statues was introduced, *De VI Consulatu Honorii Augusti*, XXVIII, 585; Sheridan 1966, 206.

[8] Prudentius describes the statue as "shining, glittering", because of her golden reflection, Prud. *Contra Symmachum*, II. 28. The statue of Victory was presumably monumental and of considerable size, perhaps even seven to eight meters high, Pohlsander 1969, 589.

[9] Nike's connection with an obverse image on 5th century BC coinage signifying victory is associated with the mint of the ancient city of Terina and the reverse type of Nike standing, holding a wreath and a (palm) branch in hand. Bellinger 1962: http://numismatics.org/digitallibrary/ark:/53695/nnan62016; https://greekcoinage.org/iris/id/terina.hn_italy.2568; Later on, in the 3rd century BC, on the reverse of silver didrachm minted in Rome, Victoria is presented again, attaching a wreath to a palm branch, http://numismatics.org/crro/id/rrc-22.1

[10] The attribute of a palm branch, a typical Greek symbol of victory given as a prize to the winners of athletic contests from probably the 5th century B.C., was introduced in Rome during the games in 293 B.C., Graillot 1919, 850, 852.

[11] Vasić et al. 2016, 96–97, no. 19–21; Gavrilović 2017, 193–203.

[12] The marble female hand holding a *patera* with an egg in it and a male oversized hand with missing sceptre were discovered in the northern room of the *thermae* of Constantine the Great's villa at Mediana during the excavations in 2019, documentation of the Institute of Archaeology in Belgrade.

[13] The fragment of white marble relief was discovered during archaeological excavations of Constantine the Great's baths at Mediana, in 1962. The dimensions of the fragment are 9.5 x 7,5 x 2.1 cm and although the authors of this paper hoped that this was a part of the marble relief found in 2022, unfortunately it is not.

[14] So-far discovered mythological sculptural compositions and statues from other late antique imperial domains and *villae,* like the Palace of Theodosius in Sirmium, Felix Romuliana (Gamzigrad) near Zaječar, the villa at Chiragan, the villa at Montmaurin, the Panaya Domus in Corinth, the villa Valdetorres de Jarama in Spain, etc., show that the most frequent deities presented were Aesculapius, Hercules, Dionysus and members of his *thiasos*, Venus, Diana etc., Videbech 2015, 452, 474, ft. 21; Stirling 2005, 30, 37, 179, 241–242 ft. 115.

[15] Watts 2012, 468–469.

[16] Stirling 2005, for the statuette of Victory from the villa at La-Garenne-de-Nérac see 64, fig. 30; for Venus–Victoria in Montmaurin see 39–40, fig. 12–13; for the Victory statuette from the villa Lamarque see Beckmann 2016, 299, ft. 737.

[17] Stirling 2005, 67, 81.

[18] The image of Victoria decorated private homes of Romans in fresco-painting (frescos from Pompei or from Livia's house on Palatine Hill), minor arts, but also in funerary art (in the iconography of funerary monuments or decorating sides of sarcophagi), Graillot 1919, 852.

the theatre of Philippi, and theatres in general)[19] and public monuments, particularly favoured by late antique aristocrats and the elite of Roman society.[20] In that context, the appearance of the goddess Victoria in imperial domains, like Mediana and Felix Romuliana, is completely expected and understandable – there could be no deity more suitable for accompanying a Roman emperor and to watch over him and his triumphs, than the goddess Victoria.

In the context of the iconography, the goddess' presentation on the Mediana relief is similar to the image of the goddess from the relief discovered in Obernburg am Main,[21] but it also bears iconographic analogies with the image of Victoria from the stone of the four gods from Aschaffenburg[22] and to the relief presentation of Victoria from the inscription plate discovered in Stuttgart-Bad Cannstatt[23] (although this Victoria is static, while Victoria from the Mediana relief is presented actively flying). Stylistically, the marble relief presentation from Mediana shares similarities with the relief from Szombathely, formerly known as Savaria (in the details of the framing of the relief and modelling of the drapery).[24] The marble relief with the presentation of Victoria from Mediana was discovered in the layer belonging to the second building phase (330–378), but the modelling of the goddess' naked right leg, globe and particularly the quite shallow shape of the drapery that covers the deity's left leg, suggest the period in which the relief was made to be from the middle of the 3rd to the middle of the 4th century. Although we cannot say with certainty whether the primary function of the Mediana Victoria relief was votive, it can be presumed that its function in Constantine the Great's baths was to adorn one of its rooms, thus being purely decorative. The reuse of statues is an already confirmed custom in imperial palaces and villas on the territory of Serbia and two practices are known, reuse with a decorative or with a cult/religious/votive purpose. A head of the goddess Venus, dated to the 1st century AD, was found during excavations of the imperial palace in Sirmium in the archaeological layer of the 4th century, probably later reused as decoration for the fountain, of which decorative elements were excavated in the vicinity of the head's discovery.[25] Additionally, in the Mediana villa with peristyle, a large hoard of ancient sculptures was discovered in 1972.[26] This hoard consisted of various pagan deities such as Aphrodite, Hygeia and Aesculapius, whose worship remained popular in the time of Christianity, probably due to the personal religious aspirations of Constantine's heirs, namely Julian the Apostate.[27] Considering the presented examples, it can be concluded that the reuse of ancient works of art can suggest respect of artistic and aesthetic values during the reign of Constantine and his heirs, but at the same time their aspiration towards the retrospective – based upon the nostalgia and cultural continuum that provided the desired everlasting concept of *Roma Aeterna*.[28] For this reason, the decorative role of Victoria's relief is clear, but cultic – the symbolic role of the motif closely associated with the imperial propaganda should not be completely neglected.

---

19 Victoria's presentations in theatres are related to the close connection between the deity and the goddess Nemesis, but also to the connection of Nemesis with the *Victoria Augusta* type, Gavrilović 2011, 198; For the goddess Victoria in the theatre of Philippi, see Aristodemou 2015, 74–75; As a result of her victorious character and symbolism, being particularly exploited in the imperial propaganda of the 2nd century and appearing on the official coinage with different variations, the goddess Victoria's image is present in theatres and was, thus, closely associated with the goddess Nemesis, who was also, as was Victoria, considered *regina causarum et arbitra rerum*, Pastor 2011, 90.

20 Graillot 1919, 852; Stirling 2005, 87–88.

21 Fragmented votive relief (the upper part with goddess' head and half of torso is missing) from Obernburg am Main was discovered in the *principia* of the fort (now in the Roman Museum in Obernburg am Main, inv. no. R 1901.3), http://lupa.at/6940?query=851617666

22 The stone of the four gods was discovered in the foundation of the parish church in 1984. in Mömlingen (now in the Abbey Museum in Aschaffenburg). It is a column base with images of four deities (Victoria, Silvanus, Fortuna, Mars or Hercules?) on each side of the column, http://lupa.at/6888?query=851617666

23 The votive plate with inscription and two Victorias was found in Stuttgart-Bad Cannstatt (now in Stuttgart-Württemberg State Museum, inv. no. RL 199), http://lupa.at/7800?query=2075730329.

24 The votive relief from Szombathely (now in Savaria Museum, inv. no. 10/67/65) presents winged goddess Victoria in a rectangular niche, with a cloak covering her right arm and legs and with a palm branch in her left and wreath in her right hand, http://lupa.at/3390?query=2075730329.

25 Anđelković Grašar 2020, 117; Popović 2008, 153–159, Fig. 2; Popović 2009a, 267–269, Fig. 1; Jeremić 2009, 488–489, Fig. 22/a–b; Davidović, Subašić 2011, kat. 1; Popović 2012, kat. 9.

26 In one of the western rooms of the "villa with a peristyle", a collective find of a marble and two porphyry sculptures was found, which were hidden in that location after the demolition of the villa. Јовановић 1975, 59, Т. XIII, сл. 17; Петровић 1976, 67, Сл. 28; Срејовић, Цермановић-Кузмановић 1987а, 146, kat. 64; Tomović 1992, 67–69, cat. 96; Срејовић 1993, кат. 85; Петровић 1994, 37, сл. 23.

27 Anđelković Grašar 2020, 177; Popović 2006, 84;

28 Поповић 2013, 181





Fig 3. Tabula ansata with relief representation of Victoria, from Viminacium (Source: http://lupa.at/28645?query=1896210798)

Сл. 3. Tabula ansata са представом Викторије из Виминацијума (извор: http://lupa.at/28645?query=1896210798)

Fig. 2. Statue of Victoria, from Viminacium (Source: http://lupa.at/29725)

Сл. 2. Статуа Викторије из Виминацијума (извор: http://lupa.at/29725)

Judging by the so-far known Central Balkan presentations of the goddess Victoria, it seems that this particular iconographic type was quite popular in Roman provinces in the mentioned territory. The goddess is presented in finds known from Singidunum, Margum, Viminacium and Felix Romuliana – with the most numerous presentations discovered in Moesia Superior's capital – Viminacium, where a fragmented torso of the goddess, a *tabula ansata* with Victoria's image and a votive icon with the deity's representation were found. A fragmented limestone torso of the goddess Victoria is, unfortunately, missing the goddess' head, hands and feet, yet it is well enough preserved that a certain identification of the winged divinity can be made (Fig. 2). The divinity is presented dressed in a long, richly folded himation belted under her chest, with large wings that extend to the full height of the statue, and summarily modelled feathers.[29] Although the goddess' head is missing along with her hands and attributes, based on other known statues it can be presumed that she was shown with a palm branch in her left hand and a wreath in her raised right hand, while standing on a globe or a sphere. Ichnographically, the statue of Victoria from Styberra is very similar to the statue from Viminacium, particularly in the context of the himation and the modelling of the wings,[30] while stylistically, judging by the linear shaping of the goddess' figure, it can be presumed that the statue from Viminacium was probably made in the 3rd century. A marble *tabula ansata* with a relief presentation of the goddess

[29] The statue's preserved height is 0.67 m, it was discovered in the site Kostolac, and is now in the National Museum in Požarevac, http://lupa.at/29725

[30] The statue (height 38.5 cm) was discovered during archaeological excavations in 2008 in the locality of Styberra, and is now kept in the Heritage Institute and Museum in Prilep (inv. no. 2008/5), http://lupa.at/28645?query=1896210798.

Victoria was also discovered in Kostolac, near the southern rampart of the military camp of Viminacium (known by the toponym the "Kapija"), unfortunately in quite a fragmented state with some parts missing (Fig. 3).[31] The deity is presented walking, dressed in a *tunica paliolata,* which does not cover her right arm and breast, richly plaited and flowing around the goddess' body. Victoria's face is very carefully modelled with almond eyes and a small nose and mouth, with wavy hair divided in the middle and gathered into a bun. Her wings are plastically emphasised like fish scales in the upper part. The wings terminate at the level of the goddess' waist. In her right hand, Victoria is holding a palm branch, while in her raised left hand she probably held a now lost wreath. The epigraphic field in the form of *tabula ansata* has only a part of the preserved inscription, which was reconstructed as: *Im[(p (erator)….co[(l(onia)*? [32] In the triangular field of the tabula, there is an image of Medusa's head, above the field an eagle with stretched wings is presented, while under the field a motif of a rosette can be seen. The modelling of the relief implies very careful and skilful work, certainly made in the period when Viminacium had already become a colony, after 239. The image of Victoria presented as the goddess in the moment of crowning relates to her close connection with Roman emperors and the State, in this case, however, to the emperor (and his triumph, implied with the image of an eagle) to whom the inscription was dedicated, possibly Gordian III. In that context, the coinage from Viminacium's mints could help since several uncustomary series have the image of Victoria crowning Gordian III on their reverses.[33] S. Dušanić thinks that these types of coins relate to Gordian's triumph over the Sassanids, who he defeated in 243 at the battle of Resaena.[34] B. Borić-Brešković, however, does not think that the presentations on Viminacium coinage reverses are related directly to Gordian's triumph over the Sassanids, but are connected to the stay of Gordian's father-in-law, the praetorian prefect Timesitheus, in Moesia in 242 and his efforts to gather an army from Moesia.[35] D. Spasić Đurić believes that the relief from Viminacium was made to commemorate Gordian's victory at the battle of Resaena.[36] Whatever the reason for the making of the Viminacium triumphal relief dedicated to the Roman emperor might have been, it was an impressive dedication, whose reconstruction of over 2.4 m in length and 0.7 m in height implies its placement on some monumental architectural construction, like one of the military camp's gates or triumphal arches.[37] Ichnographically, the Victoria relief from Viminacium bears a great similarity to the stone relief of the divinity discovered in Ephesus[38] and, to a certain extent, to a marble relief from Rome (now in the NY Carlsberg Glyptotek in Copenhagen),[39] while stylistically it resembles the Victoria image from the Solin relief.[40] but the richly plaited dress swirling around the goddess' body, the palm branch and the wings show a certain linearity and, thus, imply a dating for the relief to the last decades of the first half of the 3rd century.

The limestone votive icon with the goddess' representation from Viminacium (Fig. 4) presents a quality local work, which is unfortunately in a poor state, with most of the iconographic details erased due to advanced calcification. The rectangular icon with an arc-shaped top is missing a part of its upper right angle and lower part of the right lateral frame.[41] The figure of Victoria is chiselled in deep relief and the goddess is presented walking to the right, dressed in a long himation flowing

---

31 In 1981, in the locality of Kapija – Mali čair, near the southern rampart of the military camp Viminacium, a fragmented *tabula ansata* was discovered with a relief presentation of the goddess Victoria. Some of the relief's parts are lost and the dimensions of the preserved object are 1.00 x 0.60 x 0.20 m. The relief is now kept in the National Museum in Požarevac, inv. no. 2243 (02/2551), Спасић Ђурић 2011, 277.

32 *IMS* II, 106, no. 65.

33 Душанић 1961, 145–146, no. 6; Борић-Брешковић 1986, 136–137.

34 Душанић 1961, 146.

35 Борић-Брешковић 1986, 158–162.

36 Спасић Ђурић 2011, 286.

37 Спасић Ђурић 2015, 43, 44, fig. 47–48 (reconstruction of Victoria relief from Viminacium)

38 The marble relief of Nike/Victoria was placed on one of the spandrels of the arch over the "Herakles Gate" on Kuretes Street in Ephesus. Although the relief probably dates from the 2nd century, it was built on the gate in a later period, in the 5th to 6th century, when it was erected by the Proconsul Flavius Const(antius), and, thus, constituted the frame for the display of imperial authority. Bammer 1976/77, 93–126; Töpfer 2015, 7, fig. 4.

39 Vollkommer 1997, 255, no. 234.

40 The relief from Solin, Salona (now in the Archaeological Museum in Split) shows Victoria crowning an emperor who is riding to the right, with a winged griffin beside the horse. The god Mars is also presented on the right side, along with a running youth (prisoner) and a male figure, http://lupa.at/25025?query=851617666

41 The votive icon (dim: height 42 cm, width 28 cm in lower part and 22 cm in upper part of the icon, thickness 12–15 cm) with the Victoria representation was accidentally discovered in the locality of Čair, Kostolac (Viminacium), and is now held in the National Museum of Požarevac (inv. no. 720), Томовић 1989–1990, 109.



Fig 4. Votive icon with representation of Victoria, from Viminacium (Source: http://lupa.at/25025?query=851617666)

Сл. 4. Вотивна икона са представом Викторије из Виминацијума (извор: http://lupa.at/25025?query=851617666))

around her legs. The barely visible half-stretched wings can be noticed on the deity's back. Unfortunately, all of Victoria's facial details are quite unrecognisable, although her wavy hair can be still observed. In her half-raised right hand, Victoria is holding a large wreath, while her left arm is placed next to her body. Although the deity is not standing with one foot on a globe, as in the votive icon from Mediana, this iconographic type of walking Victoria represents a sub-type that was also very popular in Roman art. The closest iconographic analogy representing the image of Victoria comes from a relief discovered in Sisak (Siscia)[42] Certain details, like the goddess' flowing dress and the skilfulness with which it is modelled, imply a talented local artisan, who made the votive icon most probably from limestone from one of the quarries in the vicinity of Viminacium. Additionally, the linearity present in the modelling of the goddess' body and dress clearly imply the period from the second half of the 3rd century as the time span in which the icon was made.

In this context, porphyry fragments of wings, feet and hands, found in Felix Romuliana–Gamzigrad, most likely belong to the goddess Victoria crowning Emperor Galerius (Fig. 5)[43] or perhaps crowning two Augusti – Galerius with Severus or with Licinius, as in coins minted in 293 in Cyzicus and Antioch.[44] Also originating from Gamzigrad is a small pilaster with a representation of Victoria that belonged to the facade of the eastern, main gate of Felix Romuliana (Fig. 6).[45]

42 The relief of Victoria was discovered in Sisak (now in the Archaeological Museum in Zagreb, inv. no. 107). Under the image of the goddess, a fragmented inscription is present *Ti(berius) Claudius [---]* http://lupa.at/22782?query=2075730329

43 Живић 2010, 123, сл. 81, 82.

44 Поповић 2017, 76.

45 The pilaster (dim. height 0.48, width 0.35 m) was found in 1986, on a façade of the eastern gate of the younger fortification in Felix Romuliana, Gamzigrad (now in the National Museum in Zaječar, inv. no. Г/1456). Only the middle part of the pilaster is preserved, with decoration on the front and lateral sides. The goddess Victoria is presented on the front side under two standing figures, with outstretched wings and a laurel wreath in her right hand. M. Živić presumes that the two standing figures represent the Augusti or Caesars from the period of the second tetrarchy and that Victoria holding a laurel wreath is an allusion to Galerius' triumph over the Persians, celebrated in Rome in 303, Живић 2015, 475, no. 4, T. LXXVII.





Fig. 5. Possible reconstruction of a portrait of Emperor Galerius crowned by Victoria, from Felix Romuliana, Gamzigrad (After: Popović 2017, 76)
Fig. 6. Pilaster with a representation of Victoria, from Felix Romuliana, Gamzigrad (After: Живић 2015, T. LXXVII)

Сл. 5. Моīућа реконсīрукција īорīреīа цара Галерија, коīа крунише Викīорија из Феликс Ромулијане, Гамзиīрад (īрема: Popović 2017, 76)
Сл. 6. Пиласīер са īредсīавом Викīорије из Феликс Ромулијане, Гамзиīрад (īрема: Живић 2015, T. LXXVII)

On the front side of the pilaster, parts of two standing figures are visible, possibly rulers (Augusti and Caesars of the second tetrarchy), below whom is represented Victoria with spread wings, with a laurel wreath in her right hand. This could be interpreted as an allusion to Galerius' great triumph over the Persians, celebrated in 303 in Rome.[46] The scene in which Victoria crowns the ruler or overhangs the globe in the emperor's hand, remained common on the reverse of the coins of the Roman and Byzantine emperors.[47] Of course, Victoria appears in other Galerius monuments (as previously on Diocletian's too), such as on the panel relief on the west face of the south pier of the Arch of Galerius in Thessalonica, carrying the same message of the military strength and success behind the Roman emperor and Roman state.[48]

There are only three bronze finds that present the goddess Victoria – two statuette-appliques from Kostolac (Viminacium) and Dubravica (Margum) and one applique from Belgrade (Singidunum). Both statuette-appliques belong to the iconographic type of the winged Victoria standing on a globe – the statuette-applique

46 Живић 2010, 110, сл. 64 а, б.

47 Васић 1981, 135–140; Јанковић Михалџић 2004, cat. 296, 297; Поповић 2001, cat. 67, 67a.

48 Rees 1993, 182.







Fig. 7. Bronze statuette-applique of Victoria, from Viminacium (After: Величковић 1972, fig. 88)
Fig. 8. Bronze statuette-applique of Victoria, from Dubravica, Margum (After: Величковић 1972, fig. 89 a–b)
Fig. 9. Bronze statuette-applique of Victoria, from Belgrade, Singidunum
(After: Antička bronza Singidunuma 1997, fig. 51)

Сл. 7. Бронзана сшашуа-айликација Викшорије из Виминацијума (йрема: Величковић 1972, fig. 88)
Сл. 8. Бронзана сшашуа-айликација Викшорије из Дубравице, Марīум (йрема: Величковић 1972, fig. 89 a–b)
Сл. 9. Бронзана сшашуа-айликација Викшорије из Беоīрада, Синīидунум
(йрема: Antička bronza Singidunuma 1997, fig. 51)

of Victoria from Kostolac has both arms out-stretched with both hands missing, as are the attributes the goddess held, most probably a palm branch and a wreath (Fig. 7).[49] The deity is dressed in a long flowing chiton quite basically modelled, as is the goddess herself, and it bears certain similarities to a bronze applique from Boston.[50] However, the statuette-applique from Kostolac is a provincial work, which can be dated into the 3rd century. More skilful work is presented in the statuette-applique from Dubravica (Margum), where Victoria is presented standing on a globe, dressed in a chiton with a himation, with an *aegis* on her chest (Fig. 8).[51] The goddess' wavy hair is divided in the middle and gathered into a low bun on her neck, while the front part of her hair is fashioned into a diadem like ornament. Her facial details are emphasised by incision and punctuation, as are the rich folds of her chiton. The unfurled wings on the divinity's back are decorated with lines that imitate bird feathers, while in her outstretched hands she holds an oversized garland decorated with lines and dots, which also ornament the quadrant base on which the figure is placed. As on the statuette-applique from Kostolac, on the figurine from Dubravica the presence of a ring-shaped quoit and an iron peg imply that they were used as decorative elements of furniture, army equipment, or a wagon (?).[52] The third bronze find in the shape of Victoria from Belgrade (Singidunum) represents a very interesting applique that shows the goddess *en face*, standing dressed in a long tunic (*talaris* tunica), over which a short shift

[49] The bronze statuette-applique of goddess Victoria from Kostolac, Viminacium is quite badly preserved, height 5.9 cm, now placed in the National Museum of Serbia, Величковић 1972, 59, no. 88, fig. 88.

[50] Moustaka, Goulaki-Voutira, Grote 1992, 886, no. 483.

[51] The bronze statuete-aplique from Dubravica (Margum) represents an accidental find from 1948. year, height 9.3 cm, now placed in the National Museum of Serbia, Ibid, no. 89 a–b, fig. 89 a–b.

[52] Ibid.

(*colobium*) is placed (Fig. 9).[53] The divinity's hair is divided in the middle with wavy hair gathered into a low bun, while on her face, large round eyes dominate with a small nose and mouth. On her back, large unfurled wings with linearly incised plumes are presented, with one part of the right wing missing. Above her head, in her raised hands, Victoria is holding a clypeus or disc with an inscription in three lines:

CAIS
SACE
RD

On the deity's nose and belly, there is a quadrant hole for fixing the applique on a clamp, a piece of furniture, a cult object, etc.[54] The possibility that this applique was part of some cult object is emphasised by the presence of the inscription, which could be reconstructed as CA(esar)IS SACERD(os), the priestess of Caesar. Although the iconography of the Singidunum applique makes it currently unique in the territory of the Central Balkan provinces, the presentation of Victoria with a clypeus is analogous to the image of the goddess holding a shield, from a fragmented relief discovered in Augst (Augusta Rauricorum),[55] while its stylistic characteristics underline its provincial origin towards the end of the 3rd or the beginning of the 4th century.

As the symbol of victory, strength and triumph, the Roman goddess Victoria has, as a predecessor, the Greek goddess Nike, whose name is first mentioned by Hesiod, as the name of the daughter of Styx and the giant Pallas.[56] Her iconography was similar to the iconography of some other goddesses (like the goddess Eris who was a deity of strife and discord, but also as Nike was a mediator between gods and human beings) because of her quite impersonal appearance – she was presented with wings and a *kerykeion, a* "messenger's" staff, a characteristic attribute of the god Hermes/Mercury.[57] However, from this period originates the first sculpture that shows Nike at the same time running and flying, known as Nike of Archermos.[58] In literature from the 5th century B.C., Nike is related to success in gymnastic and musical contests and, as such, started appearing on the coins of various cities like Ellis, Camarina, Catana, Gela, Himera, Leontini, etc. A particular "syncretism" that announced the true later role of Nike and, afterwards, the goddess Victoria, appeared in Athens in the shape of Athena Nike, the warlike goddess, whose cult was introduced to the Acropolis at the end of the 6th century B.C., with the goddess' shrine reconstructed after the Persian wars and, during Perikle's reign, a temple was dedicated on the Acropolis.[59] From the 5th century B.C., the iconography of Nike became standardised – she is depicted sacrificing at an altar, erecting or crowning a Tropaion[60] or crowning kings with a triumphal wreath. The goddess clearly symbolised victory, whether political or military, presenting the divine support of the ruler and the state. The cult of Nike as an independent goddess can be traced from the middle of the 4th century B.C. [61] and during the Hellenistic period, particularly in visual imagery of Alexander the Great and, later, the Diadochi; she was the key element and a guarantee of victory, on which they constituted a legal and real claim to their rule over the Persian empire.[62] In the Hellenistic period, the goddess of victory was not only praised by

---

[53] The bronze applique from Belgrade (Singidunum), height 9.4 cm, width 5.3 cm, now held in the National Museum of Serbia (inv. no. 2725/III), Ibid 1972; 178, no. 116, fig. 116; Antička bronza Singidunuma 1997, 70, no. 51, fig. 51.

[54] Величковић 1972, 79.

[55] Several relief fragments were discovered before 1847 in the *Castrum Rauracense* and in 1928 at the north exit of the main forum of the locality of *Augusta Rauricorum* (now held in the Roman Museum in Augst, inv. no. 1905.2352, 1928.704-705, 1928.731-732. On the fragmented relief presenting Victoria, the goddess is standing on a globe holding a clypeus, with both raised hands (there is a human bust in the centre of the clypeus), http://lupa.at/8040?query=851617666

[56] Hesiod, Theog. 384.

[57] Töpfer 2015, 2.

[58] The statue of Nike running and flying at the same time was sculpted by Archermos and was presumably dedicated to the god Apollon on Delos before the middle of the 6th century B.C., Ibid.

[59] The shrine of Athena Nike on the Acropolis was destroyed by the Persians, but reconstructed by the Athenians, who were thankful to the goddess for bestowing them with victory in the battlefield. The goddess' temple built during Perikle's reign may have honoured the battle of Plataea, Hall 2003, 129.

[60] Töpfer 2015, 3.

[61] Nike was associated with different deities, such as Poseidon and Herakles, but most importantly with Zeus and Athena. At Olympia, Zeus was the deity who provided victory, while Nike awarded the prize. The deities had a common altar at Olympia, and the close connection between them, introduced by Hesiod, can be observed in Pheidias' Nikephoros Zeus, who bore Nike in his hand. In later times, Nike was considered Zeus' daughter, Sikes 1895, 282; Fears 1981, 772.

[62] After the battle of Issus in 333, Alexander the Great was represented on decadrachms crowned by Nike. A similar message is repeated on the reverse of tetradrachms struck after Ipsus, where Nike crowns the name of Lysimachus with the wreath of triumph or where the goddess crowns a trophy, Fears 1981, 765–766, 770.

rulers, but also citizens/individuals – one of the most famous monuments dedicated to Nike was the sculpture of Nike of Samothrace, once located in the sanctuary of the Great Gods of Samothrace. The usual opinion was that the statue was dedicated by Rhodians to the divinity to commemorate their naval victory, most probably over the Seleucids.[63] However, new information about the sculpture and its base was provided after a conservation campaign that led to a new installation in the Louvre Museum in 2013–2014, as well as continuous research and excavations, which raised the suggestion that the statue was placed within a *naiskos* located at the highest point of the theatre.[64] The idea that the fragmentary inscription, associated with a small statue base of Lartian marble, originally attributed to Nike's pedestal and associated with the sculptor's signature, in contemporary research has been completely abandoned, based on its small size and position that rather indicates the donor's name. This means that the origin of Nike's sculptor remained unknown, while in stylistic analyses it can be associated with the Gigantomachy of the Great Altar of Pergamon and the chronological frame of the second quarter of the 2nd century B.C. In terms of its dedication it could even be considered one of the earliest Roman monuments on Greek soil, considering the possibility of its private donation.[65]

In republican Italy, the image of Victoria appeared first from the 5th century B.C. onwards in coins from 24 Italian cities and communities, directly related to the coinage struck in Greek cities.[66] Later, in the 4th and 3rd centuries B.C., the deity's image appeared on mirrors and *cistae* from Preneste, presenting her rather as a personification than a goddess, unlike in two dedications from Trasacco (vicus Supinum) from the end of the 3rd century B.C., which could testify to the existence of Victoria's temple.[67] The goddess' official introduction to Rome took place in 294 B.C., when Lucius Postumius Megellus built and dedicated a temple to the divinity on Palatine Hill.[68] A hundred years later, once again on Palatine Hill, a second, rather small, temple to Victoria Virgo was built by Marcus Porcius Cato, who celebrated his triumph in Spain.[69] Besides Mars and Venus, Victoria was the only deity to whom Sulla erected a dedication celebrating his victory in the battle at Chaeronea in 86 B.C. Later, in 82. B.C. he introduced *ludi Victoriae,* celebrated from 26th October to 1st November, while in 45 B.C. in honour of Victoria Caesaris, Caesar instituted *ludi Victoriae*, which took place from 20th to 30th July.[70] The divinity actually had several annual religious festivals, with the most important one taking place on 1st August, when a white cow was sacrificed to Victoria and when the goddess' devotees prayed to her in the hope that she would provide a victory for the Romans in the battlefield, ensure religious efficiency and protect and guard Roman domination in the conquered territories.[71] As was already mentioned earlier, after Augustus' victory at Actium in 31 B.C., Victoria's statue from Tarentum was placed on an altar in the Roman senate and in Augustan imperial propaganda the goddess as *Victoria Augusta* had a prominent place – on coinage, in literature, in art, etc., making the deity the personal agent of *Divus Augustus*.[72] Images on coinage confirm that Claudius and Nero continued the production of coins with the legend *Victoria Augusti*, alluding to Augustus, as did later emperors, and by the late 2nd century the goddess Victoria became *Victoria Romana* – the closest and most powerful protectress of the Roman emperor, the empire and the Roman people. Consequently, her cult spread and gained popularity through all provinces, being particularly favoured among the army, which is

---

[63] Nike of Samothrace is a free-standing statue whose base is in the shape of a warship's prow, while the goddess is presented as though she has just landed on the ship, with her himation flowing in the wind. According to H. Thiersch who, in 1931, restored the inscription written on a small fragment discovered near the statue, the name of the sculptor was identified as "Pythokritos son of Timocharis of Rhodes", which dated the sculpture into the period from approx. 210 to 165 B.C. It was believed that the sculpture of Nike was probably placed at the southern end of the portico terrace of the sanctuary of the Great Gods of Samothrace, after the victory, thus, overlooking over the whole sanctuary. Different parts of the sculpture have been discovered over the years in excavation campaigns from 1863 to 1875, being reconstructed and placed in the Louvre Museum, Paris, Pollitt 1986, 113–116.

[64] Palagia 2021, 149–157.

[65] Palagia 2021, 163–169.

[66] Miano 2016, 115.

[67] In earlier literature it has been suggested that the cult of Victoria was introduced from Rome to Trasacco (*vicus Supinum*), but D. Miano doubts that the goddess was perceived as a Roman divinity in *vicus Supinum*, Ibid, 119.

[68] Livy writes that consul L. Postumius Megellus built a temple to Victoria from collected fines, before he went to war in Samnium, Livy X, 33.9.

[69] The second temple built for Victoria Virgo by Marcus Porcius Cato in 193 was situated only a few metres to the west of the first temple of Victoria. The deity was probably presented as an enthroned Roman Matron, holding a palm branch in her left and a patera in her right hand, Konrads 2016, 130.

[70] Miano 2016, 114.

[71] Konrads 2016, 132.

[72] Ramage 2000, 181–182; Norena 2011, 161.

attested by a large number of votive inscriptions, offerings made by soldiers and military equipment,[73] but also among the Romanised population outside Rome. In the context of the army, the high level of popularity of Victoria's symbolism as the goddess of triumph, particularly military triumph, can be observed in the appearance of her image in the iconography of two military cults *par excellence* – Jupiter Dolichenus and Mithras.[74] In the iconography of Jupiter Dolichenus, the goddess Victoria is frequently shown (sometimes standing on a globe and with a palm branch in one hand) holding a crown either towards the god or over his head.[75] The goddess is mainly shown in votive plates, in the shape of a statuette on the top of triangular votive plates or in the iconography presented on the triangular votive plates of Jupiter Dolichenus, whether the context of the objects is military or civilian. However, her role is more that of a messenger of Jupiter Dolichenus than a goddess, which is supported by the fact that there is no mention of Victoria in a divine context in any currently known votive dedication to Jupiter Dolichenus. In the cult of the god Mithras, the role of the goddess Victoria is somewhat more complex: as D. Boschung states, it was probably the use of the motif of the goddess Victoria killing the bull in the Augustan period (originating from the motif of Athena Nike killing a bull from the parapet of the 5th century B.C. goddess' temple on the Acropolis in Athens),[76] that was, in a way, transferred in the iconography of the Mithras cult.[77] However, the image of a flying Victoria on a globe with a crown on votive monuments and reliefs associated with the god Mithras should be understood as primarily the emperor's victory, the deity who secures the success of Roman rulers and who is, thus, closely related to the Roman ruler.[78]

In Christianity, representations of the goddess Victoria remained important, bearing in mind their important symbolic significance, which could not have been abandoned so easily.[79] Constantine the Great placed two figures of the goddess Victoria on his Arch in Rome to commemorate the victory at the Battle of Milvian Bridge, which was a civil war but was, afterwards, treated very symbolically as a result of the vision he had that led him to become a Christian (Fig. 10).[80] Besides the recognisable iconography, naturally clear Christian symbols were also added. On coins of Constantine the Great, the goddess Victoria is represented, signifying the ruler of the entire Roman Empire, pagans as well as Christians, the victor of all enemies and rivals.[81] In that context, a gold solidus minted in Thessalonica depicting Victoria holding a *tropaeum*, which was of course a clear Roman trophy, reminded Christians of the Cross of Christ and the ultimate victory of their God.[82] The long cross in Victoria's hands entered common iconography from 420, and it became recognisable on solidi minted in the East, while from the 6th century, the goddess was shown with a cross,[83] a shield or a wreath and an orb with a cross – *Globus cruciger*.[84] This kind of image of Victoria soon became ichnographically recognisable, symbolically well-defined and, thus, often schematically rendered, which led to its duplication on other objects. On an ingot made on the occasion of the celebration of the triumph of Constantius II in Sirmium in 358, after the victory over the Sarmatians in Pannonia and Upper Moesia, in front of the inscription POLIGERNAISIPI, in a circular seal, there is a standing figure of the goddess Victoria, who holds a laurel wreath in each of her

---

[73] The goddess Victoria was presented on military artefacts like, for instance, breastplates, among other *dii militares* like Mars, Minerva, Hercules, etc. The finds of breastplates from Apulum, Carnuntum, the Rhine area, and Barbaricum (in the vicinity of Orgovany in Hungary) all bear representations of Victoria (either her full figure or bust), Gui, Timofan, Dana, Anghel, Suteu 2020, 222–223.

[74] The image of the goddess Victoria also appears on votive icons of the Danubian Riders, depicted behind the Riders, crowning them. However, since the cult of the Danubian Riders presents a syncretistic cult mainly spread in the Danubian provinces in the 3rd century, which borrowed many elements from the iconography of different deities, it can be presumed that Victoria's image symbolises the idea of victory, personification and not the goddess herself.

[75] Speidel 1978, 43.

[76] Kunisch 1964, 83f; Smith 1886, 275 etc.

[77] Vermaseren 1950, 154; Cumont 1956, 222; Adrych et al. 2017, 25; The motif of goddess Victoria killing the bull was shown in the coins from the Augustan period, marking emperor's success in Armenia. In later period (around 100. year A. D.), the scene was presented in friezes from the Imperial palace on the Palatine and the Basilica Ulpia, but also in sepulchral art, Boschung 2021, 138.

[78] A. Mastrocinque rightly observes that many dedications on votive monuments to the god Mithras are made for the victory and well-being of the Roman emperors, while an altar discovered in the Mithraeum at Mühltal am Inn (*statio Enensis*) is dedicated to the Victoria of the Roman emperors, Mastrocinque 2017, 68–69.

[79] Grierson 1999, 31–32.

[80] Varner 2014, 48–77; Sande 2012, 277–290.

[81] Borić-Brešković, Vojvoda 2013, 218–233;

[82] RIC VII, no. 174.

[83] Gold solidus minted under Theodosius; Kent 1994, no. 219.

[84] Grierson 1999, 6–7, 33. Some of the examples in: Мано-Зиси 1954–1955, 167; Црноглавац 2004, кат. 303, 304, 305; Kondić 1984, 179–188.



Fig. 10. Reliefs of Victoria, from Constantine's arch, Rome
(Source: Parco Archeologico del Colosseo, with the permission of the Italian Ministry of Culture / Su concessione del Ministero della Cultura – Parco Archeologico del Colosseum)

Сл. 10. Рељефи Викторија са Константиновог славолука, Рим
(извор: Археолошки парк Колосеум, уз дозволу Министарства културе Италије / Su concessione del Ministero della Cultura – Parco Archeologico del Colosseum)

raised hands, below which war trophies are located.[85] The standing figure of the goddess, frontally represented with her head turned to the left and a laurel wreath in each of her hands, was common as a reverse depiction on coins at the turn of the 4th to the 5th century, as well as on imperial lead seals of the 6th century.[86]

Victoria's standing figure, known from coinage, was also present as the decoration of gems in rings, and here she could be represented with a wreath, an olive or a palm branch. The palm motif is itself associated with the spiritual and physical rise and victory, while in Christianity it symbolises triumph over death and martyrdom, while the olive is a symbol of longevity and union with God, olive wreaths, known as *Corona Natalitia,* were hung on the doors of porticoes of Greek and Roman houses where a child had been born.[87] The combination and variation of the combined symbolism of motifs and the goddess image in such cases is associated with a more private signification and cult meaning, maybe similar to the imitation of empress coin images for the decoration of cameos on various jewellery types.[88]

---

[85] Петровић 1976, 132, сл. 55; Дрча 1993, 16, бр. 2, сл. 4; Дрча 2004, кат. 197.

[86] Stepanova 2010, 15–24; From the collection of the National Museum in Belgrade there are three lead seals. on the obverse of the first one, Emperor Justinian is shown, while on the other two there are busts of the emperor and possibly the empress. Stamenković, Ivanišević 2013, 239–252, kat. 11–13; Гај-Поповић 1980, 165–168.

[87] Rogić et al. 2012, 346, 348–349.

[88] Anđelković Grašar 2020, 61–71; Дрча 2004, кат. 140; Поповић 2001, кат. 10.

Conclusion

Fragments of the marble relief with the representation of Nike/Victoria from Mediana, presumably made between the middle of the 3rd century and the middle of the 4th century, discovered in the layer belonging to the second building phase of the *thermae* between 330–378, inspired the authors to search deeper into the significance of this motif in the period of Late Antiquity. Firstly, it should be expected that at a palace, such as Constantine's villa at Mediana, this marble relief, whose primary function was perhaps a votive one, was used/re-used with a purely decorative function, bearing in mind the tendency of Constantine's heirs towards cultural identity and continuity.[89] Late antique pagan art was a testimony to the tradition of ancient culture and expression of *paideia* and was later Christianised, mostly according to its symbolical meaning and powerful messages, of which people of high social status were very much aware.[90] Another important thing that was discussed is the context of the imperial residential complex, which allowed various associations between Mediana and another imperial palace, Felix Romuliana, or Moesia Superior's capital Viminacium, which was important for military and political affairs. Related to Victoria's importance in the imperial ideology, this paper intended to discuss Victoria's identity, as a personification or a goddess, and whether her cult was imported from Hellenistic monarchies or if she was a Roman deity.[91] In both cases she represented a medium mediator and visual testimony of triumph and power. From the republican era, the cult of the goddess Victoria spread rapidly from Italy and was most often associated with the celebration of military victories, or certain military commanders or emperors, particularly emphasised in coronation scenes.[92] *Victoria Caesaris*, later known as *Victoria Augusti*, was the most important ideological aspect of victory under a single ruler, although Venus was also the victorious goddess (as *Venus Victrix*), but she did not have the kind of the personal significance and attachment to the emperor as Victoria did.[93] Bearing in mind the importance of the Central Balkan provinces during Late Antiquity, the number of Roman emperors originating from this region and their significant building activities, it would be reasonable to expect these kinds of associations and search for the importance of Victoria's symbolism and meaning in this period. Before, the altar was venerated, but with the growing popularity of Christianity various threats arose in the period mentioned here, most notably the law in 408 prohibiting heathen statues, which finally resulted in its removal from its original location. [94] In practice, many pagan deities remained popular even until the 6th century. As a common representation on coins in a long tradition from the 3rd century B.C., Victoria's image remained on the reverse side of imperial coinage until the early Byzantine era,[95] when she appeared for the last time on coins of Heraclius, after his victory over the Persians in 629.[96] The celebration of triumph, in the early Byzantium period, received a new form on Honorius' gold coins, when the goddess Victoria was replaced by the motif of God's hand – *Manus Dei*, which descends from heaven and crowns the emperor with a laurel wreath.[97] The combination of these two motifs – Victoria and *Manus Dei*, appears on the reverse side of a solidus of Galla Placidia, daughter of Theodosius I, minted in Aquileia in 425, from the National Museum in Niš.[98]

The popularity and frequency of the Victoria representations is certainly related to the imperial cult and tools in the service of its propaganda, and even in Christian art the presence of this pagan goddess could be associated with troubles inside and outside the empire and political insecurity in Late Antiquity. These political crises constantly raised doubts about the triumph of the emperor, who, in situations when he was unable to respond otherwise positively to the challenges, could do so by guaranteeing the security and victory of the state through the use of one motif and its centuries-old symbolic heritage.[99] The Christianisation of the image of the goddess Victoria on coins was completed by her transformation to an angel, who, during the Middle Ages, continued to represent a mediator in the coronation of the God-given power of rulers.[100] In terms of the function and protection of the

[89] Поповић 2013, 181.

[90] Saradi 1997, 402.

[91] Miano 2016, 109–124.

[92] Fishwick 1993, 113–117.

[93] Fishwick 1993, 115.

[94] It is not known whether the removal of the Altar of Victory from the Roman Senate included the Statue of Victory, Sheridan 1966, 186–206.

[95] Weinstock 1971, 92.

[96] Grierson 1999, 6, 32–33; Анђелковић et al. 2013, 388.

[97] Doyle 2015, 169.

[98] Јанковић Михалџић 2004, кат. 300.

[99] Doyle 2015, 170–171.

[100] Pohlsander, 1969, 597.

ruler, the emperor/empress and the state, the Virgin Mary/Theotokos appeared as the main figure, whose attributes in this regard are known from the Akathist hymn,[101] and as the visual witness of the ruling legitimacy and imperial power, her image replaced that of Victoria. However, statues of the goddess Victoria remained present in the visual culture of Constantinople into the 5th and 6th century.[102]

The popularity of the goddess Victoria in art and particularly its longevity during early Christianity can be explained by its specific symbolical connotations and genuine meaning for the state in which the safety of the emperor's rule needed to be secured, even with motifs of a strong pagan heritage. It is possible that in this heritage Christians found the purpose of personification, which, unlike a true divinity, whether a god or goddess, could co-exist with Christian dogma. This is probably why any pagan deity that originated from a personification continued to be tolerated – such as Tyche, Medusa or Victoria.[103]

101 Pentcheva 2010, 12–21; Peltomaa 2011, 109–116.

102 Pentcheva 2010, 19–21.

103 Cf. Anđelković Grašar 2016, 63–72; Milovanović, Anđelković Grašar 2017, 167–182.

BIBLIOGRAPHY:

Sources:

Hesiod *Theog.* – *Hesiod, Theogony and Works and Days*, (trans.) M. L. West, Oxford University Press, Oxford, New York 1988.

Abbreviations:

ANRW – *Aufstieg und Niedergang der Römischen Welt,* edd. H. Temporini & W. Haase, Berlin 1972–

Claudian – C. Claudiani, *De VI Consulatu Honorii Augusti*, tr. M. Platnauer, Harvard University Press 1922.

IMS – *Inscriptions de la Mésie Supérieure*, I, II, III/2, IV, V, VI, Belgrade 1976–1995

RIC – *Roman Imperial Coinage,* I–X, London 1923–1994

Literature:

Adrych et al. 2017 – P. Adrych, R. Bracey, D. Dalgish, S. Lenk, R. Wood, *Images of Mithras*, Oxford 2017.

Анђелковић et al. 2013 – J. Анђелковић, Д. Рогић, Е. Николић, Од венца до круне – развој идеје и значења у визуелној култури касне антике и раног хришћанства, Српска теологија данас 2012, 2013, 383–392 (J. Anđelković, D. Rogić, E. Nikolić, Od venca do krune – razvoj ideje i značenja u vizuelnoj kulturi kasne antike i ranog hrišćanstva, Srpska teologija danas 2012, 2013, 383–392).

Anđelković Grašar 2016 – J. Anđelković Grašar, Female Power that protects: Who is the Woman who Take Care of the City? Goddess Protectresses on the Territory of the Central Balkans in Late Antiquity, *Arheologija I Prirodne Nauke 11/2015*, 2016, 63–72.

Anđelković Grašar 2020 – J. Anđelković Grašar, *Femina Antica Balcanica*, Arheološki institut, Evoluta, Beograd 2020.

Античка бронза Сингидунума 1997 – *Античка бронза Сингидунума* (*Antique Bronze from Singidunum*)*,* ed. С. Крунић, Београд 1997.

Aristodemou 2015 – G. Aristodemou, Mars Victor, Victoria and Nemesis Invicta. Three votive reliefs from the ancient theatre of Philippi (Kavala) reconsidered, *Cult and Votive Monuments in the Roman Provinces, Proceedings of the 13th International Colloquium on Roman Provincial Art, Bucharest–Alba Iulia–Constanta, 27th of May – 3rd of June 2013 – within the framework of Corpus Signorum Imperii Romani,* ed. C. G. Alexandrescu, Cluj–Napoca 2015, 73–86.

Bammer 1976/1977 – A. Bammer, Ein spätantiker Torbau aus Ephesos, Österreichische Jahreshefte 51, 1976/1977, 93–129.

Beckmann 2016 – S. E. Beckmann, *Statuary Collections in the Late Roman Villas of Hispania and Southwestern Gaul*, PhD dissertation, University of Pennsylvania 2016, https://repository.upenn.edu/edissertations/2183

Bellinger 1962 – A. R. Bellinger, Victory as a Coin Type, Numismatic Notes and Monographs, American Numismatic Society, New York 1962 (http://numismatics.org/digitallibrary/ark:/53695/nnan62016)

Borić-Brešković, Vojvoda 2013 – B. Borić-Brešković, Mirjana Vojvoda, The Iconography of Constantine the Great's Coinage, in: *Constantine the Great and the Edict of Milan 313. The Birth of Christianity in the Roman Provinces on the soil of Serbia*, (eds.) I. Popović, B. Borić-Brešković, Belgrade 2013, 218–233.

Boschung 2021 – D. Boschung, The Image of a Cults: The Tauroctony, *The Mystery of Mithras. Exploring the heart of a Roman cult (catalogue),* eds. L. Bricault, R. Beymiers, N. Amoroso, Musée Royal de Mariemont 2021, 133–142.

Brown 2003 – M. Brown, *Prudentiuc' Contra Symmachum*, Book II. Introduction, Translation and Commentary, unpublished PhD thesis, Newcastle upon Tyne 2003.

Bruun 1966 – P. M. Bruun, Constantine I – Licinius (313–337), (eds.) C. H. V. Sutherland, R.A.G. Carson), *RIC* VII, Spink and Son Ltd., London 1966.

Црноглавац 2004 – В. Црноглавац, каталог у: Археолошко благо Ниша, од неолита до средњег века, Српска академија наука и уметности, Београд 2004 (V. Crnoglavac, katalog u: Arheološko blago Niša, od neolita do srednjeg veka, Srpska akademija nauka i umetnosti, Beograd 2004).

Cumont 1956 – F. Cumont, *Les Mysteries de Mithra*, Brussels 1956.

Davidović, Subašić 2011 – J. Davidović, S. Subašić, Venere Sirmijuma, Sremska Mitrovica 2011.

Doyle 2015 – C. Doyle, Declaring Vistory, Concealing Defeat? Continuity and Change in Imperial Coinage of the Roman West, *c*. 383 – *c*. 408, in: *Shifting Genres in Late Antiquity* (eds.) G. Greatrex, H. Elton, Ashgate Publishing, Ltd., Farnham 2015, 157–171.

Дрча 1993 – С. Дрча, каталог, у: *Римски царски градови и палате у Србији*, Д. Срејовић (ур.), Београд, САНУ 1993 (S. Drča, katalog: u: Rimski carski gradovi I palate u Srbiji, D. Srejović (ed.), Beograd SANU 1993).

Дрча 2004 – С. Дрча, каталог, у: *Археолошко блаīо Ниша, од неолиīа до средњеī века*, Српска академија наука и уметности, Београд 2004 (S. Drča, u: *Arheološko blago Niša, od neolita do srednjeg vek*a, Srpska akademija nauka i umetnosti, Beograd 2004).

Fears 1981 – J. Rufus Fears, The Theology of Victory at Rome: Approaches and Problems, *ANRW,* Band 17/2, Teilband Religion, Berlin Boston 1981, 736–826.

Fishwick 1993 – D. Fishwick, *The Imperial Cult in the Latin West I*, Brill, Laiden 1993.

Hölscher 1967 – T. Hölscher, Victoria Romana, Verlag Philipp von Zabern, Mainz am Rhein 1967.

Hölscher 2006 – T. Hölscher, The Transformation of Victory into Power: from Event to Structure, in: Representations of Was in ancient Rome, (eds.) S. Dillon, K. E. Welch, Cambridge University Press, Cambridge 2006.

Гај-Поповић 1980 – Д. Гај-Поповић, Оловни печат цара Јустинијана I, Нумизматичар 3, Београд 1980, 165–168 (D. Gaj-Popović, Olovni pečat cara Justinijana I, Numizmatičar 3, Beograd 1980, 165–168).

Gavrilović 2011 – N. Gavrilović, Ceramic *crustulum* with the representation of Nemesis-Diana from Viminatium. A Contribution to the Cult of Goddess Nemesis in Roman Provinces of Central Balkans, *Starinar,* LXI, Belgrade 2011, 191–203.

Gavrilović 2017 – The marble group depicting Drunken Dionysus with Satyr from Mediana, *Ante Portam Auream, Studia in Honorem Professoris Aleksandar Jovanović,* ed. M. B. Vujović, University of Belgrade, Faculty of Philosophy 2017, 193–203.

Graillot 1919 – H. Graillot, Victoria (Nike), *Dictionnaire des Antiquités Grecques et Romaines*, Ch. Daremberg, E. Saglio, E. Pottier, G. Lafaye, Paris 1919, 830–854.

Grierson 1999 – P. Grierson, *Byzantine Coinage*, Dumbarton Oaks Research Library and Collection, Washington, D.C, (1982) 1999.

Gui, Timofan, Dana, Anghel, Suteu 2020 – M. Gui, A. Timofan, D. Dana, D. G. Anghel, C. Suteu, An Inscribed Breastplate from Apulum depicting Victoria, *Apulum*, 57, Muzeul National al Unirii Alba Iulia 2020, 217–254.

Hall 2003 – E. Hall, Asia unmanned: Images of victory in classical Athens, *War and Society in the Greek World,* eds. J. Rich, G. Shipley, London and New York 2003, 108–133.

Јанковић Михалџић 2004 – Д. Јанковић Михалџић каталог, у: Археолошко благо Ниша, од неолита до средњег века, Српска академија наука и уметности, Београд 2004 (D. Janković Mihaldžić katalog, u: Arheološko blago Niša, od neolita do srednjeg veka, Srpska akademija nauka i umetnosti, Beograd 2004).

Jeremić 2009 – M. Jeremić The Sirmium Imperial Palace Complex, in Light of the Recent Archaeological Investigations, u: Diocletian, Tetrarchy and Diocletian's Palace on the 1700th Anniversary of Existence (International Conference, Split, September 2005, ur. N. Cambi, J. Belamarić, T. Marasović, Split 2009, 471–499.

Јовановић 1975 – А. Јовановић, Неки аспекти проблема скупног налаза скулптура са Медијане код Ниша, Старинар 24–25, (1973–74), 1975, 56–65 (A. Jovanović, Neki aspekti problema skupnog nalaza skulptura sa Medijane kod Niša, Starinar 24–25, (1973–74), 1975, 56–65).

Kent 1994 – J. P. C. Kent, Western Roman Empire: Flavius Honorius-Romulus Augustus (395–476), *RIC* X. 1, London 1994.

Kondić 1984 – V. Kondić, Le trésor de monnaies d'or de Hajdučka Vodenica (limes danubien), à: *Caričin Grad I*, (éd.) N. Duval, V. Popović, Belg.-Rome 1984, 179–188.

Konrads 2016 – K. Ve Konrads, Romans of the 3rd century B. C. in front of the goddess Victoria and her temple: from mortar and stones to collective destiny, *Journal of the University of Latvia HISTORY,* 2016/2, University of Latvia 2016, 123–144.

Kunisch 1964 – N. Kunisch, Die stiertötende Nike: typengeschichtliche und mythologische Untersuchungen, Diss, München 1964.

Мано-Зиси 1954–55 – Ђ. Мано-Зиси, Ископавања на Царичином Граду 1953 и 1954 године, Старинар н.с. 5–6, 1954–1955, 155–180 (Đ. Mano-Zisi, Iskopavanja na Caričinom Gradu 1953 i 1954 godine, Starinar n.s. 5–6, 1954–1955, 155–180).

Mastrocinque 2017 – A. Mastrocinque, *The Mysteries of Mithras. A Different Account,* Oriental Religions in Antiquity (Egypt, Israel, Ancient Near East) 24, Tübingen 2017.

McCormick 1990 – M. McCormick, *Eternal Victory: Triumphal Rulership in Late Antiquity, Byzantium and the Early Medieval West*, Cambridge University Press, Cambridge 1990.

Miano 2016 – D. Miano, How Roman was Victory? The Goddess Victoria in Republican Rome, *Apex, Studi storico-religiosi in onore di Enrico Montanari,* Roma 2016, 111–126.

Milovanović, Anđelković Grašar 2017 – B. Milovanović, J. Anđelković Grašar, Female Power that Protects: Examples of the Apotropaic and Decorative Functions of the Medusa in Roman Visual Culture from the Territory of the Central Balkans, Starinar 67, 2017, 167–182.

Moustaka, Goulaki-Voutira, Grote 1992 – A. Moustaka, A. Goulaki-Voutira, U. Grote, Nike, *LIMC* VI, 1–2, Zürich–München 1992, 850–904.

Norena 2011 – C. F. Norena, *Imperial Ideals in the Roman West: Representation, Circulation, Power*, Cambridge University Press 2011.

Palagia 2021 – O. Palagia, The Nike of Samothrace, in: Known and unknown Nikai, in History, Art and Life, (ed. Lagogianni-Georgakarakos), Hellenic Organization of Cultural Resources Development, Athens 2021, 149–169.

Pastor 2011 – S. Pastor, The Divinities of the World of the Amphitheater in the Balkan-Danubian Provinces: Archaeological, Epigraphic and Iconographic Evidences of the Cult of Nemesis, *Acta Archaeologica Academiae Scientiarum Hungaricae* 62, Budapest 2011, 83–98.

Pohlsander 1969 – H. A. Pohlsander, Victory : The Story of a Statue, *Historia : Zeitschrift für Alte Geschichte*, 1969, Bd. 18. H. 5 (Dec. 1969, 588–597.

Pollitt 1986 – J. J. Pollitt, *Art in the Hellenistic Age*, Cambridge University Press 1986.

Peltomaa 2011 – L. M. Peltomaa, Epithets of the Theotokos in the Akathistos Hymn, in: *The Cult of the Mother of God in Byzantium: Texts and Images*, (eds.) L. Brubaker and M. B. Cunningham, Ashgate, Farnham 2011, 109–116.

Pentcheva 2010 – B. Pentcheva, *Icons and Power: The Mother of God in Byzantium*, Pennsylvania State University Press, University Park, PA 2010 (2006).

Петровић 1976 – П. Петровић, Ниш у античко доба, Ниш, 1976 (P. Petrović, Niš u antičko doba, Niš, 1976).

Петровић 1994 – П. Петровић, Медијана резиденција римских царева, Београд 1994 (P. Petrović, Medijana rezidencija rimskih careva, Beograd 1994).

Поповић 2001 – И. Поповић, Касноантички и рановизантијски накит од злата у Народном музеју у Београду, Антика VIII, Народни музеј Београд, 2001 (I. Popović, Kasnoantički i ranovizantijski nakit od zlata u Narodnom muzeju u Beogradu, Antika VIII, Narodni muzej Beograd, 2001).

Popović 2006 – A. V. Popović, Deities on bronze railing from Mediana in the light of theology of Julian the Apostate, Niš i Vizantija IV, 2006, 81–93.

Popović 2008 – I. Popović, Marble Sculptures from the Imperial Palace in Sirmium, Starinar 56 (2006), 2008, 153–166.

Popović 2009 – I. Popović, Les sculptures du palais imperial de Sirmium (fouilles 2003–2005), u: Les ateliers de sculpture réginoaux: techniques, styles et iconographie, Actes du Xe Colloque international sur l'art provincial romain, Arles et Aix-en-Provence 2009a, 267–272.

Popović 2012 – I. Popović, Sirmium: mermerne skulpture (Sirmium: marble sculptures), Arheološki institut, Beograd, Blago Sirmijuma, Sremska Mitrovica 2012.

Поповић 2013 – И. Поповић, Уметничка дела клесана у камену у служби царске пропаганде и хришћанских порука, у: Константин Велики и Милански едикт 313. Рађање хришћанства у римским провинцијама на тлу Србије (ур.) И. Поповић, Б. Борић-Брешковић, Народни музеј, Београд 2013, 174–183 (I. Popović, Umetnička dela klesana u kamenu u službi carske propagande i hrišćanskih poruka, u: Konstantin Veliki i Milanski edikt 313. Rađanje hrišćanstva u rimskim provincijama na tlu Srbije (ur.) I. Popović, B. Borić-Brešković, Narodni muzej, Beograd 2013, 174–183).

Поповић 2017 – И. Поповић, *Порфир. Моћ царева и достојанство богова. Скулптуре из римских градова и палата у Србији* (*Porphyry. Power of Emperors and Dignity of Gods. Sculpture from Roman Towns and Palaces in Serbia*), Београд 2017.

Ramage 2000 – E. S. Ramage, Augustus' propaganda in Africa, *Klio*, 82, Berlin 2000, 171–207.

Rees 1993 – R. Rees, Images and Image: A Re-Examination of Tetrarchic Iconography, *Greece & Rome*, Oct. 1993, Vol. 40, No. 2, Cambridge University Press 1993, 181–200.

Rogić et al. 2012 – D. Rogić, J. Anđelković Grašar, E. Nikolić, Wreath-its use and meaning in ancient visual culture, *Religion and tolerance*, Vol. X, No 18, 2012, 341–358.

Sande 2012 – S. Sande, The Arch of Constantine – Who Saw What?, in: Patrons and Viewers in Late Antiquity (eds.) S. Birk, B. Poulsen, Aarhus University Press 2012.

Saradi 1997 – H. Saradi, The use of Ancient Spolia in Byzantine Monuments: The Archaeological and Literary Evidence, *IJCT*, Vol. 3, No. 4, 1997, 395–423.

Shanzer 1989 – D. Shanzer, Allegory and Reality: Spes, Victoria and the Date of Prudentius' "Psychomachia", Illinois Classical Studies, spring/fall 1989, Vol. 14, No. ½, University of Illinois Press 1989, 347–363.

Sheridan 1966 – J. J. Sheridan, The Altar of Victory – Paganism's Last Battle, *L'antiquité classique*, Tome 35, fasc. 1, Université de Liège, Rijksuniversiteit te Gent, Belgium, Fondation universitaire de Belgique 1966, 186–206.

Sikes 1895 – E. E. Sikes, Nike and Athena Nike, *The Classical Review*, vol. 9, no. 5, Cambridge University Press 1895, 280–283.

Smith 1886 – C. Smith, Nike Sacrificing a Bull, *The Journal of Hellenic Studies*, Vol. 7, Cambridge 1886, 275–285.

Спасић Ђурић 2011 – Д. Љ. Спасић Ђурић, Рељеф са Викторијом из Виминацијума, Зборник Народног Музеја у Београду, XX–1/Археологија, Београд 2011, 277–290 (D. Lj. Spasić Đurić, Reljef sa Viktorijom iz Viminacijuma, Zbornik Narodnog Muzeja u Beogradu, XX–1/Arheologija, Beograd 2011, 277–290).

Спасић Ђурић 2015 – Д. Спасић-Ђурић, Град Виминацијум, Народни музеј Пожаревац 2015 (D. Spasić-Đurić, Grad Viminacijum, Narodni muzej Požarevac 2015).

Speidel 1978 – M. Speidel, *The Religion of Iuppiter Dolichenus in the Roman Army,* Leiden 1978.

Срејовић 1993 – Д. Срејовић, ур., у: Римски царски градови и палате у Србији, Српска академија наука и уметности, Београд 1993 (D. Srejović, ur., u: Rimski carski gradovi i palate u Srbiji, Srpska akademija nauka i umetnosti, Beograd 1993).

Срејовић, Цермановић-Кузмановић 1987 – Д. Срејовић, А. Цермановић-Кузмановић, Римска скулптура у Србији, Српска академија наука и уметности, Београд 1987 (D. Srejović, A. Cermanović-Kuzmanović, Rimska skulptura u Srbiji, Srpska akademija nauka i umetnosti, Beograd 1987).

Stamenković, Ivanišević 2013 – S. Stamenković, V. Ivanišević, Rimski i ranovizantijski carski olovni pečati iz zbirke Narodnog muzeja u Beogradu, *Numizmatičar* 31, Narodni muzej u Beogradu, 2013, 239–252.

Stepanova 2010 – E. Stepanova, Victoria-Nike on Early Byzantine Seals, in: *Studies in Byzantine Sigillography* 10, (eds.) J. C. Cheynet, C. Sode, Walter de Gruyter, Berlin/New York 2010, 15–24.

Stirling 2005 – L. M. Stirnling, *The Learned Collector. Mythological Statuettes and Classical Taste in Late Antique Gaul,* University of Michigan 2005.

Tarbell 1908 – F. B. Tarbell, The Palm of Victory, *Classical Philology*, Vol. 3, No. 3 (July 1908), Chicago University Press 1908, 264–272.

Томовић 1989–1990 – М. Томовић, Прилог проучавању камених вотивних икона са територије Виминацијума, Viminacium, 4–5, 1989–1990, Пожаревац 1990, 89–132 (M. Tomović, Prilog proučavanju kamenih votivnih ikona sa teritorije Viminacijuma, Viminacium, 4–5, 1989–1990, Požarevac 1990, 89–132).

Tomović 1992 – M. Tomović, Roman Sculpture in Upper Moesia, Monographies No.24, Archaeological Institute, Beograd 1992.

Töpfer 2015 – Kai Michael Töpfer, The Goddess of Victory in Greek and Roman art, *Spirits in Transcultural Skies. Auspicious and protective spirits in Artefacts and Architecture between East and West,* eds. N. Gutschow, K. Weiler, Springer 2015, 1–18.

Varner 2014 – E. R. Varner, Maxentius, Constantine, and Hadrian: Images and the Expropriation of Imperial Identity, in: Using Images in Late Antiquity (eds.) S. Birk, T. M. Kristensen, B. Poulsen, Oxbow Books, Oxford and Philadelphia 2014.

Васић 1981 – М. Р. Васић, Остава римског бронзаног новца IV и V века из Виминацијума, Старинар 31 (1980), 1981, 123–161 (M. R. Vasić, Ostava rimskog bronzanog novca IV i V veka iz Viminacijuma, Starinar 31 (1980), 1981, 123–161).

Vasić et al. 2016 – M. Vasić, G. Milošević, N. Gavrilović Vitas, V. Crnoglavac, *Constantine's villa at Mediana,* The National Museum Niš 2016.

Величковић 1972 – М. Величковић, Римска ситна бронзана пластика у Народном музеју, Београд, Народни музеј 1972 (M. Veličković, Rimska sitna bronzana plastika u Narodnom muzeju, Beograd, Narodni muzej 1972).

Vermaseren 1950 – M. J. Vermaseren, A Unique Representation of Mithras, *Vigiliae Christianae*, Vol. 4, No. 3, July 1950, Leiden 1950, 142–156.

Videbech 2015 – C. Videbech, Private Collections of Sculpture in Late Antiquity. An Overview of the Form, Function and Tradition, in *Tradition. Transmission of Culture in the Ancient World,* eds. J. Fejfer, M. Moltesen, A. Rathje, Acta Hyperborea 14, Museum Tusculanum Press University of Copenhagen 2015, 451–479.

Vollkommer 1997 – R. Vollkommer, Victoria, *LIMC* VIII, 1–2, Zürich München Düsseldorf 1997, 237–269.

Watts 2012 – E. Watts, Education: Speaking, Thinking and Socializing, *The Oxford Handbook of Late Antiquity,* ed. S. F. Johnson, Oxford 2012, 467–486.

Weinstock 1971 – S. Weinstock, *Divus Julius*, The Clarendon Press, Oxford 1971.

Живић 2010 – М. Живић, Уметничка остварења у царској палати, у: Felix Romuliana – Гамзиград, (ур.) Ивана Поповић, Београд 2010, 107–140 (M. Živić, Umetnička ostvarenja u carskoj palati, u: Felix Romuliana – Gamzigrad, (ur.) Ivana Popović, Beograd 2010, 107–140).

Живић 2015 – М. Живић, Камена пластика на територији провинције Dacia Ripensis у раздобљу III – IV века, непубликована докторска дисертација, одбрањена на департману за археологију, Филозофског факултета Универзитета у Београду, Београд 2015 (M. Živić, Kamena plastika na teritoriji provincije Dacia Ripensis u razdoblju III – IV veka, nepublikovana doktorska disertacija, odbranjena na departmanu za arheologiju, Filozofskog fakulteta Univerziteta u Beogradu, Beograd 2015).

Internet sources:

https://greekcoinage.org/iris/id/terina.hn_italy.2568 (accessed: 22.8.2023.)

http://numismatics.org/digitallibrary/ark:/53695/nnan62016 (accessed: 22.8.2023.)

Резиме: НАДЕЖДА ГАВРИЛОВИЋ ВИТАС, Археолошки институт Београд
ЈЕЛЕНА АНЂЕЛКОВИЋ ГРАШАР, Археолошки институт Београд

КАСНОАНТИЧКЕ ПРЕДСТАВЕ НИКЕ/ВИКТОРИЈЕ НА ПРОСТОРУ ЦЕНТРАЛНОГ БАЛКАНА

Кључне речи. – Нике, Викторија, вотивна икона, статуа, венац, победа, касна антика

Фрагменти мермерне вотивне иконе са представом Нике/Викторије са археолошког локалитета Медијана, на основу израде, указују на хронолошки период 2. или 3. века, иако су откривени у слоју који припада периоду између 330. и 378. године, што је и временски оквир друге фазе грађења терми. Управо овакав хронолошки контекст подстакао је ауторке овог рада да детаљније истраже значај мотива Нике/Викторије у касноантичкој римској уметности. Из тих разлога значај Медијане, као Константинове палате, разматран је у контексту коришћења или поновне употребе такве вотивне иконе од стране Константинових наследника, који су тежили наглашавању културног идентитета и династичког континуитета. У том смислу паганска уметност била је сведочанство традиције античке културе и често је могла бити христијанизована углавном према свом симболичком значењу и снажним порукама, којих су људи високог друштвеног статуса били и те како свесни. С друге стране, важност овог палатијалног, царског комплекса везана је и за друге царске палате попут Феликс Ромулијане или пак Виминацијума као главног града Горње Мезије, чији су важност за војна и политичка дешавања посведочени мноштвом археолошког и епиграфског материјала.

Управо због оваквог значаја локалитета разматрана је улога Викторије у империјалној идеологији, те њена идентификација као персонификације или богиње. Од републиканског доба култ богиње се брзо ширио и најчешће се повезивао са прославом ратних победа, одређених војних заповедника или царева, посебно препознатљивих у сценама крунисања. Ако се има у виду значај централнобалканских провинција током касне антике, те значајан број римских царева пореклом са ових простора и њихову важну градитељску делатност, оправдано је било истражити значење симболике Викторијиних представа у овом специфичном периоду и простору. Иако је познато да је олтар богиње Викторије у Курији Јулији био различито третиран од 357. до коначне 408. године, када је коначно затворен према закону, у пракси, као што је познато, многа паганска божанства, па и Викторија остала су популарна све до 6. века. Популарност и учесталост представљања Викторије свакако је повезана са империјалним култом и алатима у служби његове пропаганде, које је хришћанство толерисало, ако се има у виду политичка атмосфера несигурности и криза током касноантичког периода, управо са циљем отклањања било какве сумње у безбедност и победу државе. Хришћанизација мотива богиње Викторије на новцу завршена је њеним преображајем у анђела, док су се функције заштите владара и државе пренеле на Богородицу.

Популарност и дуговечност богиње Викторије у касноантичкој уметности може се објаснити искључиво због важности поруке коју је њена слика носила, односно снажне симболичке конотације у царском култу и идеологији, што је због самог њеног порекла не строго као паганске богиње, већ пре персонификације могуће допринело хришћанској толеранцији.

UDC: 7.025.4:624.6"01"(282.243.7.043)
https://doi.org/10.2298/STA2373143U
Original research article

NIKOLA UNKOVIĆ, University of Belgrade, Faculty of Biology,
Department of Algology and Mycology, Belgrade
EMILIJA NIKOLIĆ, Institute of Archaeology, Belgrade
MILICA LJALJEVIĆ GRBIĆ, University of Belgrade, Faculty of Biology,
Department of Algology and Mycology, Belgrade
MLADEN JOVIČIĆ, Institute of Archaeology, Belgrade

PRESERVING THE DANUBE LIMES IN SERBIA: A REVIEW OF THE BIODETERIORATION OF TRAJAN'S BRIDGE*

e-mail: unkovicn@bio.bg.ac.rs

Abstract. – One of the most significant monuments of the Roman Danube Limes is Trajan's Bridge, built in the period from 103 to 105 AD. The remains of the pillars on the Serbian bank of the Danube were partially restored four decades ago. Today, the pillar that is closest to the river, which has not undergone conservation, is subject to different types of deterioration. During the comparison between the present condition of the pillar and those recorded in photos over the last six decades, we can estimate that its level of material loss has not overly changed. However, the difference in biological growth is visible. The primary aim of this study was to record the degree of infestation and endangerment of the monument and check for possible risks of mortar deterioration where mortar is in direct contact with severely infested bricks. Moreover, a characterisation of the biodeteriogens was performed. Special emphasis was given to fungi as the main agents of deterioration. A precise assessment of the level of risk they pose to this monument was made as a basis for the formulation and implementation of appropriate conservation treatments. Severe macrofouling by epilithic lichenised fungi and mosses was documented. Even areas where pillars lack visible infestation, thriving microbial communities characterized by the presence of various fungal structures, as well as structures of trichal *Cyanobacteria,* and *Chlorophyta* were recorded. Similarities between communities documented on brick, mortar, and stone surfaces, estimated via Sørensen's quotient of similarity, were high, with the highest similarity documented between mortar and stone.

Key words. – biodeterioration, Trajan's Bridge, lichens, Danube Limes in Serbia, historical mortars, historical brick, historical stone, Roman monument

In the last few years, several projects have been initiated in the Republic of Serbia with the aim of researching and documenting the condition of building remains of the former Roman Danube border, originating from the period from the 1st to the 6th century, drawing up conservation and management plans necessary to preserve all their values, to include them in the life of local communities and to make them accessible to visitors. The main project is connected to the creation of the nomination dossier named *Frontiers of the Roman Empire – The Danube Limes (Serbia),* conducted by the Institute of Archaeology and Institute for the Protection of Cultural Monuments of Serbia – Belgrade, with the aim of including the Limes

This research is supported by the Science Fund of the Republic of Serbia, PROMIS #GRANT No. 6067004, MoDeCo2000 (project conducted by the Institute of Archaeology Belgrade, University of Novi Sad – Faculty of Technology Novi Sad, and Institute for Testing of Materials, Belgrade) and PROMIS #GRANT No. 6066210, PROTECTA (project conducted by the Faculty of Biology – University of Belgrade). This paper has been published as a preprint: Unković, Nikola and Nikolić, Emilija and Ljaljević Grbić, Milica and Jovičić, Mladen, *Preserving the Danube Limes in Serbia: A Review on the Biodeterioration of Trajan's Bridge*. Available at SSRN: https://ssrn.com/abstract=4330693 or http://dx.doi.org/10.2139/ssrn.4330693

Manuscript received 17th February 2023, accepted 2nd August 2023



Fig. 1. View from the northwest to the remains of Trajan's Bridge on the Serbian bank of the Danube in July 2021 (Archive of the Institute of Archaeology, Belgrade)

Сл. 1. Поглед са северозапада на остатке Трајановог моста на српској обали Дунава у јулу 2021. године (Архива Археолошког института, Београд)

on the UNESCO World Heritage List.[1] The scientific project *Mortar Design for Conservation – Danube Roman Frontier 2000 Years After (MoDeCo2000)*[2] examines the lime mortars of these historic buildings and tries to offer recommendations for the production of conservation mortars while respecting the principles of compatibility and preservation of the environment, using local raw materials and traditional technologies. The latest inclusion is the project *Promising Natural Alternatives for the Cultural Heritage Safeguard: A Force of Natur*e *(PROTECTA),* aimed at investigating causes of the decay of cultural heritage objects and buildings in Serbia, and the development of non-invasive, eco-friendly, and safe biocontrol methods to combat deteriogenic microorganisms responsible for the damage, in order to achieve sustainable restoration and conservation.

Among the most significant monuments of the Roman Danube Limes, which today stretches through several European countries, is Trajan's Bridge, the remains of which can be found today on both sides of the river: in present-day Serbia (the village of Kostol) (Fig. 1), and Romania (the town of Drobeta–Turnu Severin) (44°37'8.3"N 22°40'3.1"E). This once monumental structure consisting of masonry pillars on the banks and in the river bed that, together, supported the wooden construction had a total length of 1,130 m.[3] It was designed by Apollodorus of Damascus and built in the period from 103 to 105 AD in order to enable the crossing of the Danube river by the Roman army under Emperor Trajan during the conquest of *Dacia.* Along with the bridge, two forts were erected for its protection – *Pontes* on the present-day Serbian side of the river and *Drobeta* in today's Romania.[4]

The masonry remains of Trajan's Bridge situated in Serbia were archaeologically investigated in 1979 and 1980,[5] after which two embankment pillars out of four were partially restored [6] (Fig. 2). Initially, three pillars were on dry land, while the environment of the

[1] UNESCO 2022; Korać et al. 2014, 32–34.

[2] Nikolić, Jovičić 2022, 9–11.

[3] Bjelić 2020, 23; More on wooden construction, see in: Gušić 1996, 259–261; Mehrotra, Glišić 2015, 65–72; Bjelić 2020: 22–32.

[4] Гарашанин, Васић 1980, 7–8.

[5] Ibid, 7–50; Гарашанин et al. 1984, 25–84.

[6] Гушић 1985, 77.

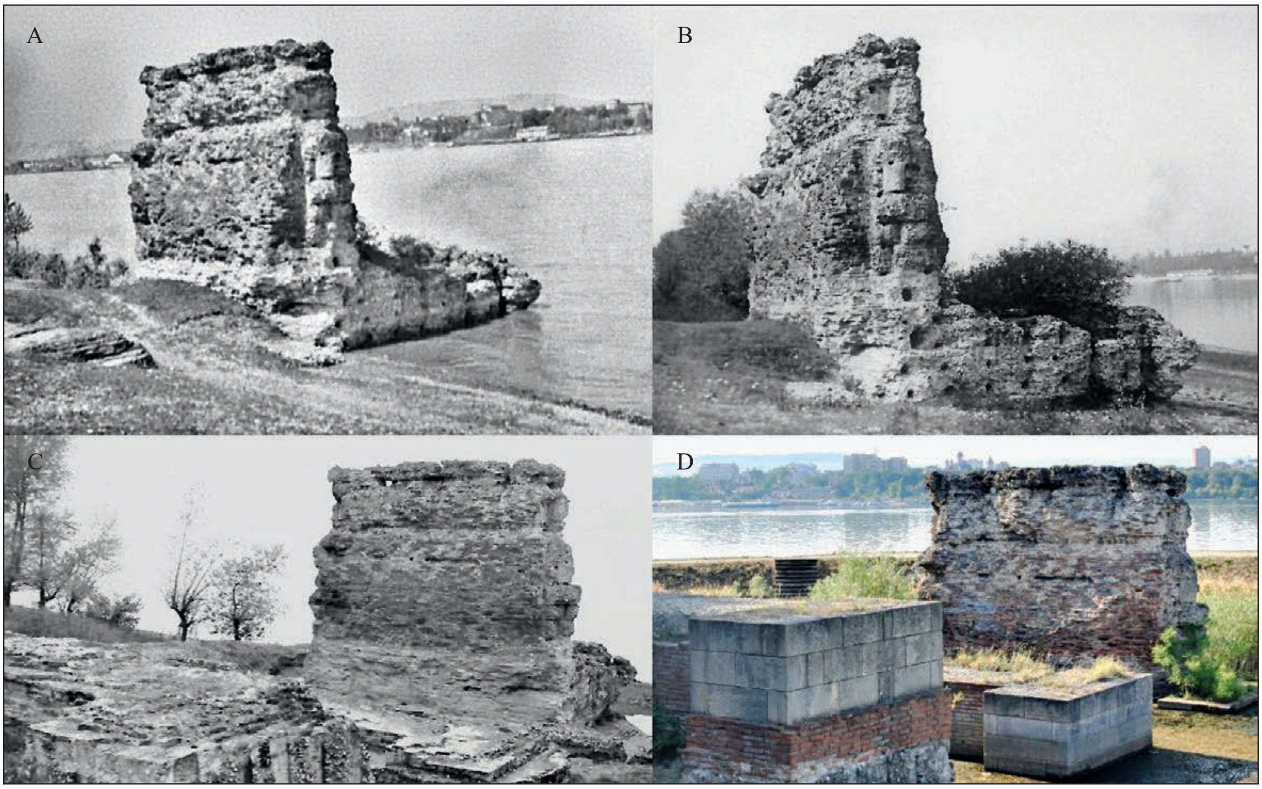


Fig. 2. Remains of Trajan's Bridge before excavations: from 1963 (A), and 1973 (B) (Archive of the Institute of Archaeology); after excavations in 1981 (C) (Archive of the Institute of Archaeology); and from 2021 (D) (Archive of the MoDeCo2000 *project)*

Сл. 2. Остаци Трајановог моста пре ископавања: из 1963. године (А) и 1973. године (B) (Архива Археолошког института, Београд); након ископавања 1981. године (C) (Архива Археолошког института, Београд); и из 2021. године (D) (Архива пројекта MoDeCo2000*)*

one closest to the river depended on the water level (Figs. 1 & 2). Construction of the Iron Gate hydropower plant system caused the rise of the Danube, which led to the building of the defensive embankment around the remains, into which water later penetrated.

Since the monument is in the area of constant water level and humidity fluctuation, and is additionally influenced by air pollution, wind, and precipitation, it was necessary to carry out the initial assessment of its present state of preservation (preparing it for future steps in the conservation plan). This has been done through the implementation of the MoDeCo2000 and PROTECTA projects, which incorporated archaeological and architectural assessments, recorded which building materials were used, implemented laboratory research of mortars, as well as reviewed the state of its conservation (report on the degree of biodeterioration).

The factors that impact building materials are: external environment, the design and choice of materials, construction practices, the properties of the materials themselves, execution of the building works, as well as subsequent maintenance.[7] Due to the influence of the environment (moisture and water, salts, air pollution, variations in temperature, exposure to fire, dynamic loading, and soil subsidence), and the properties of authentic and conservation materials and their use and maintenance in construction, there are many types of deterioration of building materials. Some of these, based on environmental factors, are frost damage, salt crystallisation, formation of different compounds and crusts, dissolution and leaching, erosion, swelling, spalling, cracking, and biological growth on masonry.[8]

The diagnostic process of collecting information and observing the monument for the purpose of its

[7] Van Hees et al. 2004, 644–645.

[8] Ibid, 645.

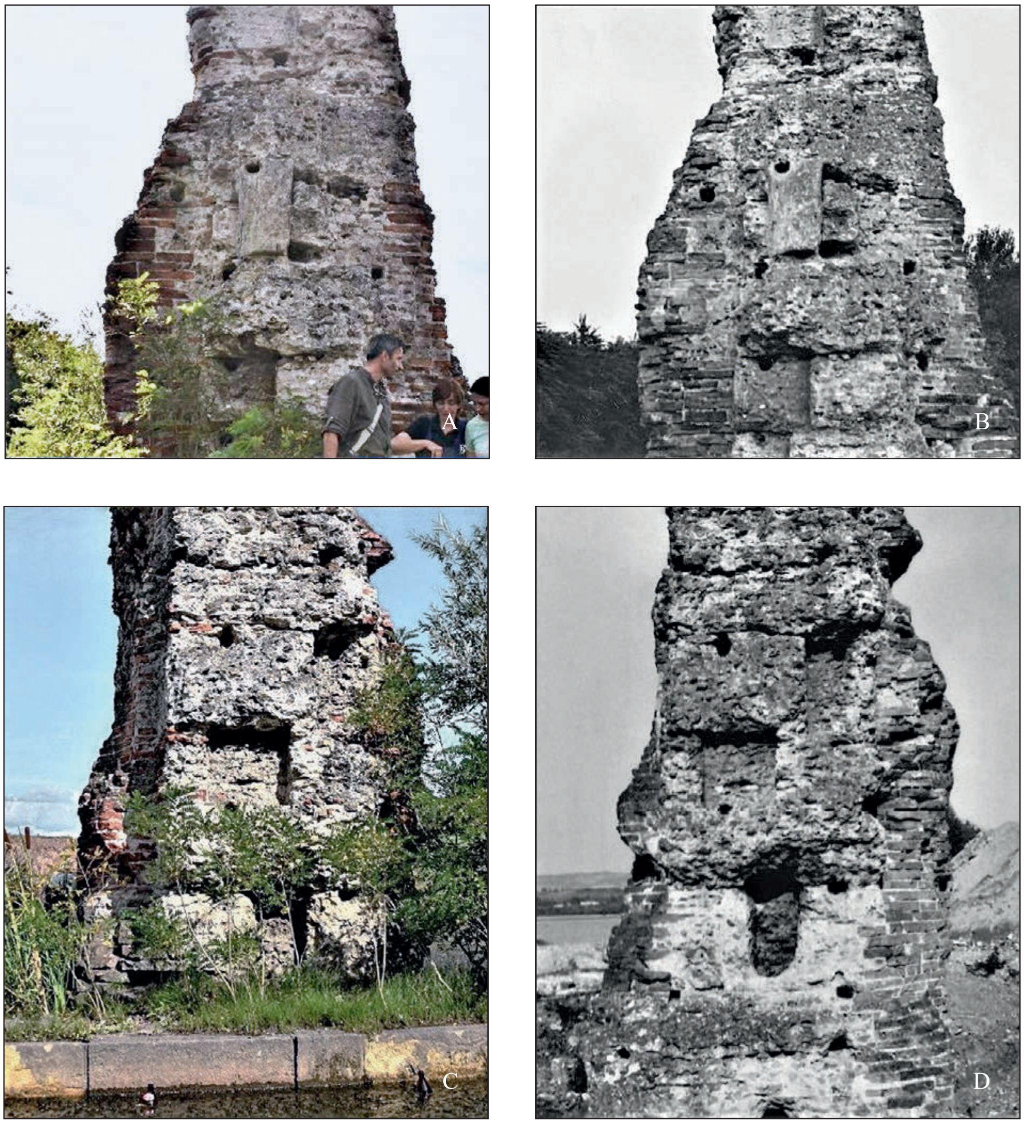


Fig. 3. Eastern side of the pillar – remains in 2020 (A), and in 1979 (B);
western side of the pillar – remains in 2020 (C), and in 1979 (D)
(Archives of the Institute of Archaeology, Belgrade – 1979 and the MoDeCo2000 *project – 2020)*

Сл. 3. Источна страна ступца – остаци у 2020. години (А) и 1979. години (В);
западна страна ступца – остаци у 2020. години (С) и 1979. години (D)
(Архива Археолошког института, Београд за 1979. годину и архива пројекта MoDeCo2000 *за 2020. годину)*

protection and conservation includes the research of the materials used for its construction and later interventions. We can recognise four components in the process of a building conservation assessment: background research (construction, materials, historical development, past interventions and uses); survey of the condition (in general and of components, in order to mark the symptoms of deterioration that can lead us to the conclusions regarding possible causes); detailed analyses (for the investigation and confirmation of deterioration causes); and prognosis with risk assessment (in order to propose the preventive or remedial treatments).[9] A significant step in this process is the determination of the degree of biodeterioration of the investigated monument.

[9] Henry, Stewart 2011, 165.

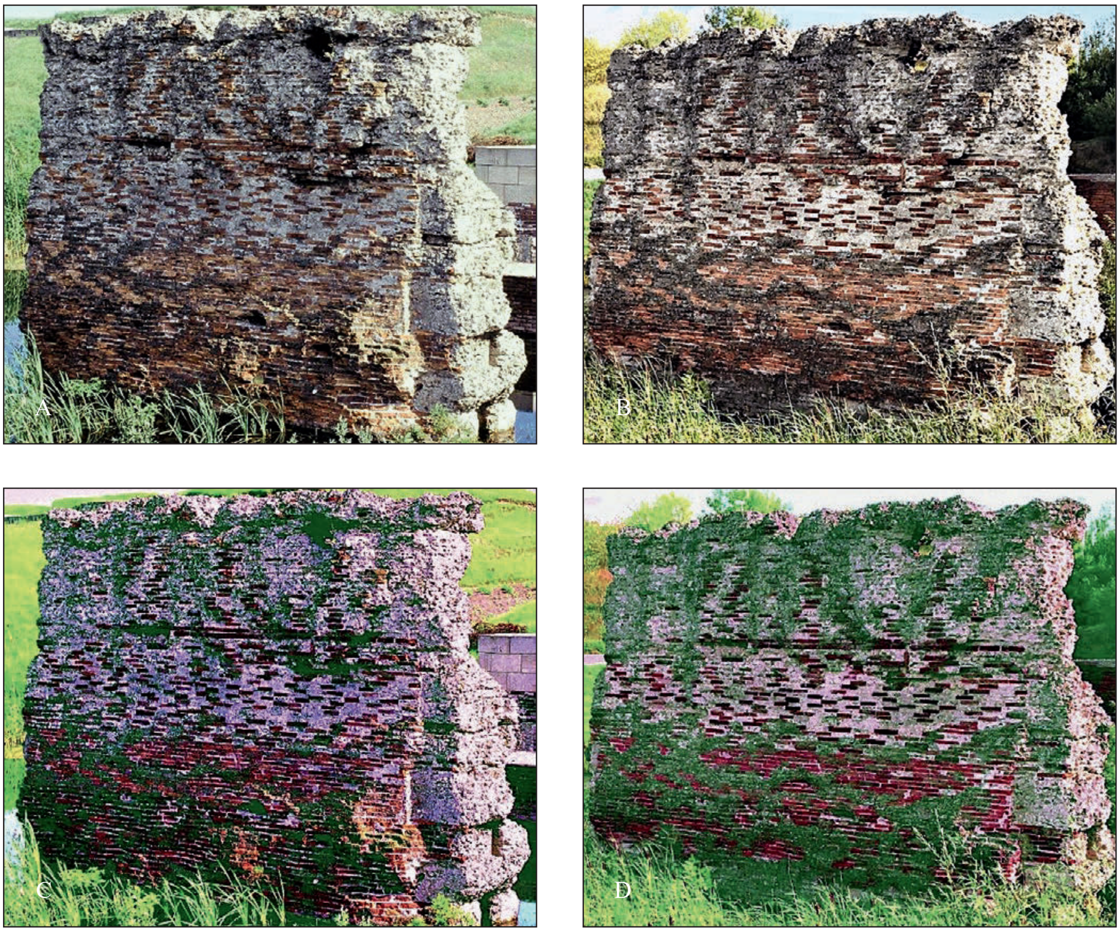


Fig. 4. Biocolonisation on the northern side of the pillar: in the period from the late 1980s to the 1990s (A) (Archive of the Institute of Archaeology), and in 2020 (B) (Archive of the MoDeCo2000 *project); from the late 1980s and 1990s (C) and from 2020 (D); images enhanced using DStretch app (RGB0) (Archive of the* MoDeCo2000 *project)*

Сл. 4. Колонизација на северној страни стубца: у периоду касних осамдесетих и током деведесетих година 20. века (А) (Архива Археолошког института, Београд) и у 2020. години (В) (Архива пројекта MoDeCo2000*); из касних осамдесетих и током деведесетих година XX века (С) и из 2020. године (D); фотографије обрађене уз употребу апликације aDStretch (RGB0) (Архива пројекта* MoDeCo2000*)*

Research aim

The masonry pillar of Trajan's Bridge on the Serbian bank of the Danube, which is closest to the river and which remained unrestored, shows signs of severe deterioration. From comparing its present condition with photographs taken from 1963 up to the rise of the Danube, but also with those taken afterwards, we estimate that the overall change in material loss was minimal (although individual deterioration of the building material itself cannot be recognised in detail due to the lower quality of black and white photos) (Fig. 3). The same conclusion applies to changes in biological colonisation and subsequent deterioration when comparing the present state with images taken in the period from 2004 onwards.[10] However, comparing these images (Fig. 4B, D)[11] with the few colour images created in

[10] Archive of the Institute of Archaeology (photos from 1963, 1965, 1966, 1967, 1969, 1973, 1979, and 1981); archive of the *MoDeCo2000* project (photos from 2020, 2021 and 2022); archive of the Institute of Archaeology (photos from 2004, 2007, 2008, 2013, 2019 and 2021);

[11] Archive of the *MoDeCo2000* project (2020, 2021, and 2022); archive of the Institute of Archaeology (photos from 2004, 2007, 2008, 2013, 2019 and 2021); the image used (2020) was enhanced using the DStretch application (https://www.dstretch.com/).

the period closer to the that connected to the water penetration (Fig. 4A, C) [12], and by using image software enhancement, we can see a more noticeable difference in the continuous biological colonisation. The growth might have been accelerated after the water penetration, but was evidentially slowed down later again to its natural rate.

Through this study, the characterisation of the biodeteriogens was performed, focusing on lichens (lichenised fungi) as the most dominant colonisers, in order to obtain data on the actual degree of biological endangerment of the monument.

MATERIALS AND METHODS

Study site and sampling points

Trajan's Bridge had twenty masonry pillars with platforms in the river bed that supported the wooden structure, as well as the approach masonry sections on both sides of the river that each consisted of four pillars, the remains of which are still visible (28 pillars in total)[13]. These masonry parts of the bridge were built of brick, stone, and lime mortar. Underwater research established that pillars that carried the platforms with a wooden construction are in the river bed, but with varying degrees of preservation.[14] As for the remains of the approach section on the territory of Serbia, one pillar was preserved at a height of 8.38 m,[15] while the other pillars were preserved only at the foundation level. After the excavation, a partial restoration of two pillars on the bank and the platform simultaneously built with the best-preserved pillar was executed. However, the best-preserved pillar remained unprotected in this process. Since the visual observation of the monument most often does not provide sufficient data for the report on its endangerment, different steps were taken in our research in order to investigate the state of the pillar more thoroughly using laboratory research. The first one was the determination of biodeteriogens.

To identify the main agents of biodeterioration of the pillar closest to the river, *in situ* microscopy and sampling were carried out on several parts of its masonry structure. The samples were taken mainly from the northern side of the pillar, but some samples also came from its eastern and western sides. This was conditioned by the possibility of a physical approach to the infested surfaces and, thus, on the inaccessible southern side only a visual inspection of the structure was performed together with a photographic record.

In situ microscopy

Direct observation of lichen growth on brick, mortar, and stone surfaces was performed using the portable Dino-Lite Edge digital microscope AM-7915MZTL. Image processing and measurements were achieved via DinoCapture 2.0 v1.5.39.A software. Identification of the documented lichenised fungi, based on the morphology of thalli and observed reproductive structures, was performed using a dichotomous key by Smith.[16]

Lichenometry

The maximum diameter of the single largest observed lichen thalli with uniform radial growth (later identified as *Lecanora campestris*) was measured to date the minimum age at which the surface of Trajan's Bridge was exposed to lichenised fungi colonisation, per the LL method described in Bradwell 2009[17], and taking into account the documented radial growth rate of *L. campestris* in a range from 0.12 to 2.3 mm per year.[18]

Bryological analyses

Mosses growing on the surface of bricks, mortar, and stone were carefully removed with a scalpel and transported to the laboratory, under sterile conditions, to be identified using a dichotomous key by Frey *et al*.[19]

Optical microscopy

A non-aggressive adhesive tape method was applied to collect samples for optical microscopy.[20] In laboratory conditions, samples were stained with Lactophenol Cotton Blue-glycerol mixture and analysed with a Zeiss Axio Imager M1 microscope using AxioVision Release 4.6 software. Detected cyanobacteria and algae were identified on the basis of cellular mor-

---

[12] Archive of the Institute of Archaeology (the photos are not dated, but they present the monument after the completed restoration works, and it is known they were made before 2004); the image used (late 1980s, or 1990s) was enhanced using the DStretch application (https://www.dstretch.com/).

[13] Гарашанин, Васић 1980, 8; Bjelić 2020, 22.

[14] Karović, Nenadović 2014, 95–97.

[15] Гарашанин, Васић 1980, 16.

[16] Smith 2009, 1–1046.

[17] Bradwell 2009, 61–69.

[18] Joshi et al. 2021, 1–16.

[19] Frey et al. 2006, 1–512.

[20] Urzì, de Leo 2001, 1–11.

phology using identification keys by John *et al*.,[21] Komárek and Anagnostidis,[22] and Ettl and Gärtner.[23]

Isolation and identification of culturable fungi

Samples for the isolation of culturable fungi were collected with sterile swabs, after which the swab tips were immersed in 2 ml microtubes (Sarstedt Inc.) with 1 ml of a 30% glycerol-Mueller Hinton Broth medium, frozen, and transported to the laboratory under sterile conditions. From each microtube, after a 1 min treatment in a vortex mixer (ZX3, VELP Scientifica), 100 µl was pipetted onto plates containing Potato Dextrose Agar (PDA) supplemented with streptomycin (500 mg L^{-1}; streptomycin sulphate salt, Sigma-Aldrich) to suppress bacterial growth. Inoculation was performed in triplicate. Inoculated plates were incubated in an oven (UE 500, Memmert) at 25±2 ºC for 7 days. After the incubation period, morphologically different colonies were reinoculated onto PDA and incubated under the same conditions to obtain axenic cultures. Isolated fungi were identified based on colony morphology and the microscopic characteristics of reproductive structures, observed with the Zeiss Axio Imager M1 optical microscope and AxioVision Release 4.6 software, using identification keys.[24]

Ecological statistics

The similarity between the communities documented on brick, mortar, and stone surfaces was evaluated using Sørensen's quotient of similarity (QS) calculated using the following formula:[25]

$$Qs = 2a / (2a + 2b + 2c)$$

where *a* – number of taxa common to two analysed substrata; *b* – number of taxa unique to one analysed substratum; *c* – number of taxa unique to the other analysed substratum.

RESULTS

Preservation state of the investigated pillar

The most pronounced deterioration of Trajan's Bridge is represented by different processes of loss of building materials. It is mostly related to bricks, then stone, while its least expression is on mortar. The bricks that formed the face of the preserved pillar, as the most exposed to external factors, are substantially effected by degradation in the upper and in the central parts of the pillar, while the bricks in the lowest zone are in a better condition. Preservation state varies, however, for parts that are always above the water and for those whose submergence depends on the variations in the level of the Danube. Most of the bricks are in a state of spalling and erosion, and the alveolisation of a number of bricks with occasional cracking is also noticeable, as well as the formation of deposits, with pronounced discolouration in the lowest zone. As for the porous stone in the core of the pillar, the most pronounced deterioration is alveolisation with erosion, but there is also scaling and delamination of the stone blocks of the restored platform, which is mostly in water. The mortar is the least affected by these changes, but alveolisation with erosion can be observed as well. The northern side of the pillar has the highest level of deterioration of materials (Fig. 5).

The bricks of the researched pillar are the most endangered by biodeterioration, followed by the stone. However, the mortar is visually mostly spared of infestation. The most pronounced presence of all colonizers, on the best-preserved pillar, is on the exposed bricks of its northern side. They are somewhat less present on the southern side, where its visible structure is also made of exposed bricks. On the eastern and western sides, where stone is mostly observed, colonisation is less common. Looking at the north and south sides of the pillar, a concentration of organisms in the form of vertical strips is noticeable, which seem to "flow" from the top of the monument to its base and are scattered on the protruding parts of the ruin, while the recessed and relatively flat parts of the structure are mostly spared. This can indicate the presence of a precipitation flow that is stopped in protruding spots, creating favourable conditions for the growth of fungi and other organisms. The growth of plants is also detected on the investigated pillar, especially on its top.

In situ assessment of surface infestation

Severe macrofouling in the form of lichen infestation of brick (Fig. 6A–D) and stone (Fig. 6F–H) was documented both visually and in more detail via *in situ* microscopy (Fig. 7). On the basis of the visual observation alone, a gradient of colonisation, in terms of substrate bioreceptivity, could be established, with

[21] John et al. 2003, 1–896.

[22] Komárek, Anagnostidis 2005, 1–786.

[23] Ettl, Gärtner 2014, 1–773.

[24] Raper, Fennell 1965, 736–737; Samson et al. 2019, 1–481.

[25] Krebs 1999, 1–620.

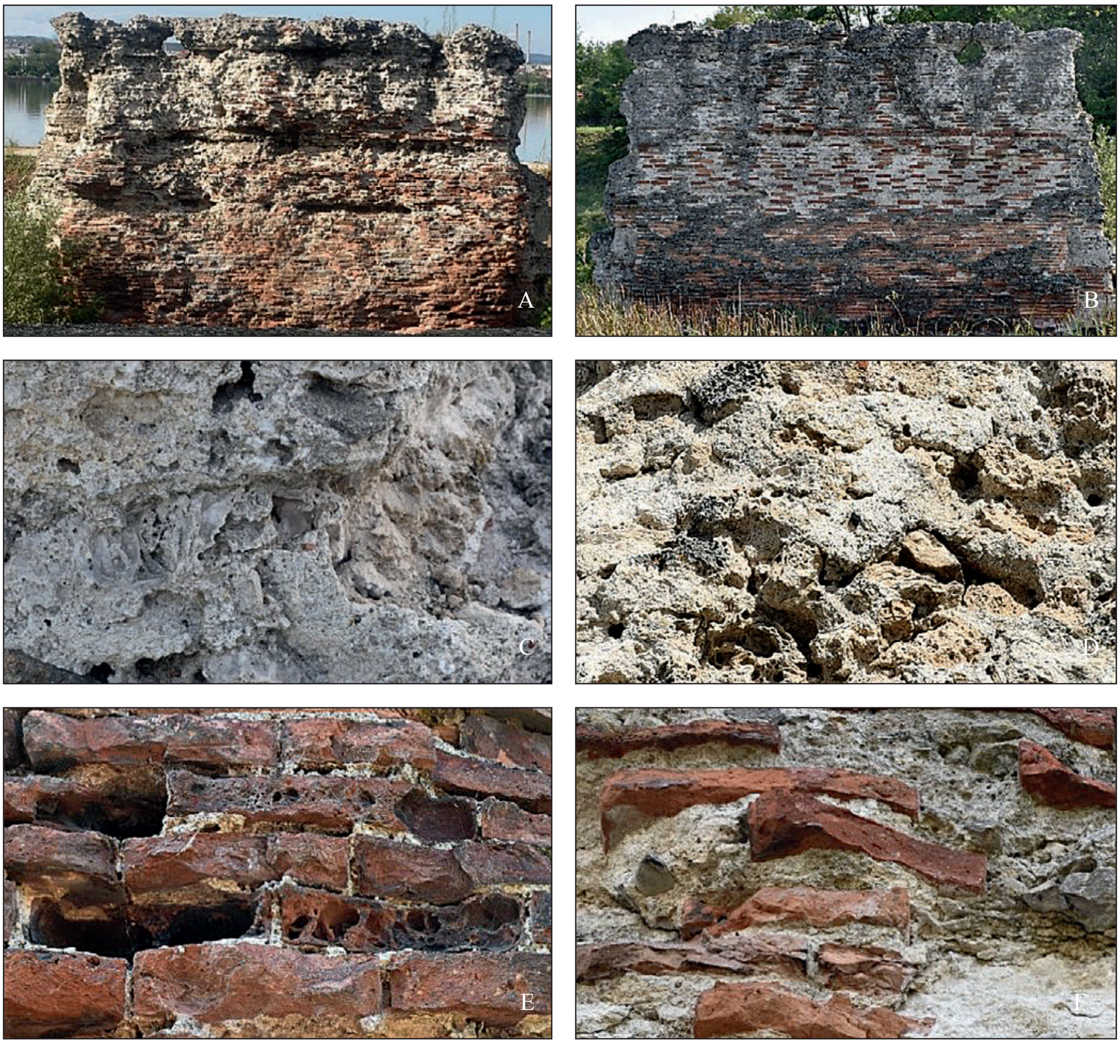


Fig. 5. Deterioration of the pillar – southern side in 2020 (A), and northern side in 2022 (B); stone and mortar deterioration in 2020 (C, D); brick and mortar deterioration in 2021 (E), and in 2022 (F) (Archive of the MoDeCo2000 *project)*

Сл. 5. ДеШериорација сШуПца – јужна сШрана у 2020. Године (А) и северна сШрана у 2020. Године (В); деШериорација камена и оПеке у 2020. Године (C, D); деШериорација оПеке и малШера у 2020. Године (Е) и у 2022. Године (F) (Архива Пројекта MoDeCo2000*)*

bricks being the most susceptible to lichen infestation, followed by stone, while large mortar surfaces, for the most part, remained clean. Predominant colonisers were epilithic crustose and foliose lichens identified as *Caloplaca decipiens*, *Lecanora campestris*, *L. dispersa*, *Parmelia saxatilis*, *Porpidia crustulata*, as well as lichens of the genera *Verrucaria* and *Xanthoria.* Based on the diameter of the largest lichen thalli of *L. campestris*, and taking into consideration the minimal growth rate of this lichen and the fact that, to the best of our knowledge, the studied part of the bridge was never cleaned of infestation and restored, it was calculated that the lichen colonisation of Trajan's Bridge could have started as early as 800 years ago.

In contrast to the bricks and stone, the mortar was, for the most part, free from infestation (as was previously mentioned), with the only exception being thin connecting layers between bricks (Fig. 6A). In these instances, colonisation presumably occurred due to the proximity of the infested bricks and the inoculum transfer between closely positioned and connected bricks. Furthermore, the lower part of the pillar, often submerged in water, was easily distinguishable from the rest of the pillar by the grey discolouration and was,



Fig. 6. Lichen and moss infestation of brick (A–D), mortar (E), and stone (F–H) of the pillar in September, 2022; lower, usually submerged part is discoloured and infestation free (I–J) (Archive of the PROTECTA *project)*

Сл. 6. Инфестација опеке ступца лишајевима и маховинама (A–D), малтера (E) и камена (F–H) у септембру 2022. године; доњи, углавном потопљени део је изгубио боју и нема инфестације (I–J) (Архива пројекта PROTECTA*)*

for the most part, free from infestation (Fig. 6I–J), with the occasional dried lichen and moss thalli occurring on bricks.

In addition to lichenised fungi, fully developed moss thalli in the form of scattered tufts are sporadically present on bricks, as well as stone and the thin layer of mortar in some instances (Fig. 6E). These were determined to be *Brachythecium glareosum*, *Grimmia pulvinata*, *Pohlia* sp. and *Tortula muralis*, with *G. pulvinata* and *T. muralis* being the most prevalent mosses documented at the studied location (Table 1).

Microbial proliferation on brick, mortar and stone surfaces

Optical microscopy of the adhesive tape samples, taken from the surface of bricks, mortar and stone, has revealed the dominant presence of lichen soredia in mass (Fig. 8A), rhizines, as well as in clusters and/or chains of melanised mycobiont, alone (Fig. 8B) or in association with green algae in different phases of lichen primordia formation. Melanised clusters of cells, very reminiscent of microcolonial fungi (MCF), were also found permeating stone fragments (Fig. 8C). In

Documented taxa	Sample type	Mortar	Stone	Brick	Submerged area
		Fungi			
Filamentous fungi					
- Ascomycota -					
Alternaria alternata	SS	+	+		+
Alternaria infectoria	SS	+	+	+	+
Alternaria sp.	SS	+	+		
Aspergillus flavus	SS	+			+
Aspergillus niger	SS		+	+	
Aspergillus nidulans	SS			+	
Aspergillus ochraceus	SS	+			
Cladosporium cladosporioides	SS	+	+	+	+
Cladosporium sphaerospermum	SS	+	+	+	+
Epicoccum nigrum	SS	+	+		+
Penicillium sp.	SS				+
- Zygomycota -					
Rhizopus stolonifer	SS		+		
- Unidentified -					
Mycelia sterilia – Moniliaceae	SS	+	+	+	+
Mycelia sterilia – Dematiaceae	SS	+	+	+	+
Yeasts	SS	+		+	+
Lichenized fungi					
- Ascomycota -					
Caloplaca decipiens	IM/AT		+	+	
Lecanora campestris	IM/AT			+	
Lecanora dispersa	IM/AT		+	+	
Parmelia saxatilis	IM/AT		+	+	
Porpidia crustulata	IM/AT			+	
Verrucaria sp.	IM/AT			+	+
Xanthoria sp.	IM/AT		+		
		Plantae			
Bryophyta					
Brachythecium glareosum	VS			+	+
Grimmia pulvinata	VS	+	+	+	
Pohlia sp.	VS	+		+	
Tortula muralis	VS	+		+	
Chlorophyta					
Apatococcus sp.	AT	+	+		
cf *Haematococcus pluvialis*	AT				+
Desmococcus olivaceus	AT	+	+	+	+
Trebouxia sp.	AT		+		

AT – adhesive tape; IM – *in situ* microscopy; VS – voucher specimen; SS – sterile swab

Table 1. List of taxa documented on various substrata of the pillar;
microbial proliferation on brick, mortar and stone surfaces (Archive of the PROTECTA *project)*

Табела 1. Листа таксона забележених на различитим супстратима стубца;
пролиферација микроорганизама на површинама опеке, малтера и камена (Архива пројекта PROTECTA*)*

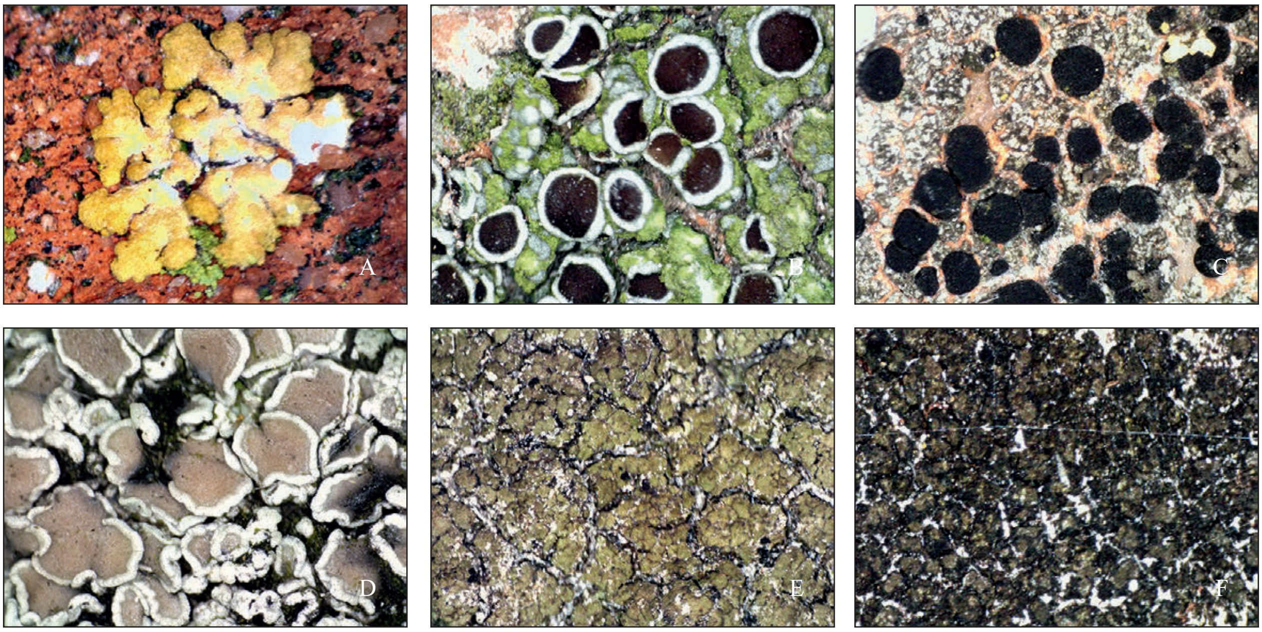


Fig. 7. Details of epilithic foliose and crustose lichen thalli, with clearly visible apothecia, observed via in situ *portable microscope (Archive of the* PROTECTA *project)*

Сл. 7. Детаљи епилитских фолиозних крустозних талуса лишајева, са јасно уочљивим апотецијама, посматрани in situ *преносним микроскопом (Архива пројекта* PROTECTA*)*

addition, various fungal structures, such as fragmented hyphae (Fig. 8G) with visible chlamydospores, sporangia, darkly pigmented ascospores presumably of *Pleosporales*, chains of *Alternaria* dictiospores, *Epicoccum* and *Helminthosporium* conidia, as well as a mass of *Cladosporium* conidia, alone or bound to trichomes and spider webs (Fig. 8D–F), were very abundant within all samples. Furthermore, green algae from the genera *Apatococcus* and *Trebouxia*, as well as *Desmococcus olivaceus*, were observed as phototrophic biofilm components on stone and mortar, all of whom are known to be lichen photobionts. These findings prove that the mortar, although clean and lacking visible infestation, possesses a thriving microbial community. The biofilm from the occasionally submerged area of the bridge, as expected, was dominated by phototrophic microorganisms, i.e., green algae, among them *Haematococcus pluvialis* and *D. olivaceus,* and trichal Cyanobacteria (Fig. 8H–K), although a mass of soredia and various associations of mycobiont and photobiont could also be observed.

Culturable mycobiome

A total of 12 filamentous fungi from six genera were determined as part of the culturable mycobiome of different substrata of Trajan's Bridge (Table 1). The greatest diversity was documented on mortar and stone, with eight fungal species each, followed by the previously submerged area of the bridge (7) and finally the exposed bricks (5). The majority of isolated fungi were *Ascomycota*, with *Rhizopus stolonifera,* the only isolated representative of the phylum *Zygomycota*. With four documented species, the genus *Aspergillus* was the most diverse, followed by *Alternaria* (3) and *Cladosporium* (2). Furthermore, the culturable mycobiome also consisted of several yeasts, as well as fungi that did not form reproductive structures in the cultures, i.e., *Mycelia sterilia* of both the *Moniliaceae* and *Dematiaceae* families.

On the basis of the results obtained by the isolation of the culturable mycobiome, together with microscopic analysis and identification of lichen and moss specimens, Sørensen's quotient of similarity was calculated to determine the similarity between the communities documented on brick, mortar, and stone surfaces, as well as those present on the surface of dry and occasionally submerged parts of the bridge. Due to species overlap, the obtained QS values for mortar-stone-brick substrates were especially high (in the range from 0.57 to 0.65) with the highest similarity documented

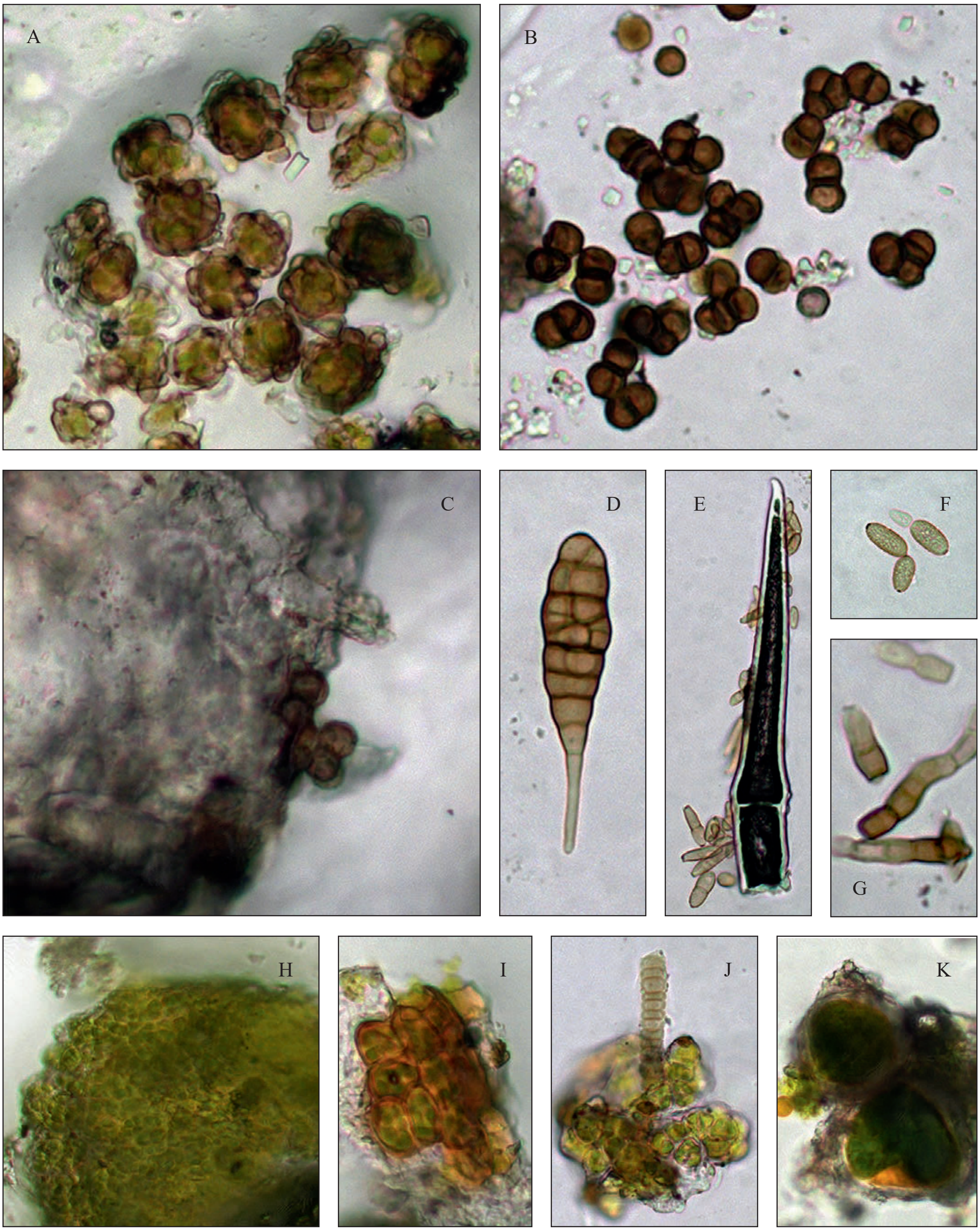


Fig. 8. Optical micrographs of adhesive tape samples from various substrata of the pillar:
A. soredia in mass; B. melanised clusters of mycobiont; C. melanised clusters permeating stone substrata;
D. Alternaria-like dictiospore; E–F. Cladosporium-like conida in mass; G. melanised hyphal fragments;
H–K. various stages of green algae and trichal cyanobacteria (Archive of the PROTECTA project)

Сл. 8. Оптичке микрографије узорака адхезивне траке са различитих супстрата ступца:
А. соредије у маси; В. меланизовани кластери микобионта; С. меланизовани кластери који прожимају камени супстрат; D. диктиоспоре Alternaria типа; E–F. Cladosporium*–конидије Cladosporium типа у маси; G. меланизовани хифални фрагменти; H–K. различите фазе животног циклуса зелених алги и трихалних цијанобактерија (Архива пројекта* PROTECTA*)*

between mortar and stone incorporated within. Furthermore, a high QS value of 0.57 was also obtained when comparing communities documented on dry and on occasionally submerged parts of the bridge.

DISCUSSION

It is a well-known fact that "maintenance-free materials do not exist".[26] The detection of the possible damage that can occur as a result of external or internal factors and proposing the actions to avoid the damage is a necessary activity prior to conservation. In the case of the remains of Trajan's Bridge in Serbia, it is very important to consider the change in the environment and its influence on building materials, since some materials are stable in one environment, but can be very vulnerable in different conditions.[27] This is especially important for the remaining parts of the bridge pillars not initially constructed in water, but now partially submerged in the varying water level.

In a travelogue from the end of the 19th century, Felix Kanitz (1829-1904) wrote that the pillar of Trajan's Bridge in its upper part was damaged due to weather conditions. He also pointed out that the local villagers tore off the stone blocks lining the shorter sides of the pillar, and that the core had hardened so much that they could not do anything to it.[28] There is no mention of the condition of the brick lining on the longer sides. However, there is a possibility that some bricks were damaged or have even completely disappeared over time, due to the separation of entire units by villagers, but more probably due to the tearing of their fragments (as a result of the impossibility of complete unit separation from the strong concrete core to which the brick lining was tightly bound).

Biological colonisation on the Trajan's Bridge did not spare a single part of the preserved pillar, and it affected all the types of construction materials present. The predominant presence of lichens and mosses indicates that the bricks, stone, and mortar possess a very high bioreceptivity and are in the later stages of biological succession, characterised by the advanced state of the deterioration process. This is not unexpected, since colonisation of monuments is greater on substrates with higher porosity or rough surfaces that retain more moisture.[29] Although known to be involved in the process of bioprotection against a multitude of weathering factors, lichen infestation, as pronounced as the one observed on the studied site, has great ecological implications due to its marked paedogenetic activity, which causes reduced substrate cohesion. Lichens deteriorate substrate biogeochemically, via oxalate formation, carbonic and various organic acids that form cation–ligand complexes with minerals altering the substrate composition (biocorrosion), and biomechanically, due to hyphal penetration, contraction of the thalli and adhesion of rhizines, which are assumed to act cooperatively and penetrate a few millimetres into the porous material over the course of several decades.[30] Furthermore, due to their slow but constant growth, they cover considerable areas with undesirable chromatic alterations.[31] All of the lichens documented in the study are from the surrounding rocks and are known colonisers and deteriogens of cultural heritage monuments worldwide, with the only exception being *L. dispersa,* which has been previously reported to cover significant areas but does not induce evident modifications.[32] The chemical and mechanical activity of mosses is, likewise, not without consequences as damage, usually manifested as discolouration, green-grey patches, and extracted minerals, is known to occur over an extended period of time. Their biodeterioration capacity is largely due to the accumulation of Ca^{2+} within the thalli, such is the case with *G. pulvinata*[33], for whom this process is very well documented. Furthermore, the death of mosses can cause indirect damage to monuments by enriching and increasing the humus content that supports the growth of successive species of the higher plant.[34] Since plant growth has been recorded on the pillar of Trajan's Bridge, especially on its top, it is necessary to carefully register the species and make decisions regarding its elimination, since the removal of higher plants should be done as soon as they grow.[35] Their appearance starts in the mortar joints, and the roots can exert mechanical stresses on this bonding material, which get higher as the plants grow, eventually causing the failure of the structure.[36]

[26] Balksten, Strandberg-de Bruijn 2021, 367.

[27] Henry, Stewart 2011, 122.

[28] Kostić 2011, 217–218.

[29] Henry, Stewart 2011, 152.

[30] Ibid; Salvadori, Municchia 2016, 39–54.

[31] Ljaljević-Grbić et al. 2017, 304–310.

[32] Piervittor et al. 1998, 263–277; Guiamet et al. 2012, 339–344.

[33] Dakal, Cameotra 2012, 36.

[34] Ibid.

[35] Elena Charola 2016, 18.

[36] Steiger et al. 2011, 230.

The culturable mycobiome, dominated by *Ascomycota* and *Zygomycota* to a lesser extent, represents a typical fungal community that originated from the surrounding soil and vegetation, and was deposited via the air onto the surface of the monument. Although frequently isolated from this type of cultural heritage object, for the most part they possess no role in the process of biodeterioration, since their particular ecology does not allow them to establish critical mass easily or at all on these extreme types of substrata. In that sense, they only act as allochtoon transients that do not participate in the complex process of microbial deterioration. On the other hand, an actively growing microbial community, documented in the samples analysed via microscopy, mainly consisted of various lichen structures and black yeast-like MCF permeating the stone and leading to the development of the *biopitting* phenomenon, i.e., the formation of pits in sizes ranging up to 2 cm in diameter and depth.[37] The dominance of extremophile organisms, such as these, is expected in the studied type of monument since they are the most adapted to the stressful factors (UV, temperature fluctuation, periods of water freezing in fissures, etc.) that characterise it.

It is not precisely known for how long Trajan's bridge was in use. Dion Cassius (c.155 – c.235) wrote that it was demolished by the Romans as early as the time of Hadrian so that it would not be used by barbarians to cross the Danube, while Procopius (500–565) wrote that the bridge gave way under the rush of the river. Most likely, after the abandonment of the province of Dacia by the Roman state in 271, the bridge definitely lost its purpose. Since it provided an opportunity for barbarians to make quick incursions, it soon began to represent a threat to the border region. This is probably why the upper structure was removed, and the last recorded use of the bridge was during the time of Constantine the Great. At a low water level in 1858, 16 pillars in the river bed were visible. Two of them were destroyed in 1909 for the purpose of unhindered navigation.[38]

The study conducted on the current state of preservation of the remains of Trajan's Bridge can be also important for scientific research in disciplines outside of biology and conservation, showing the significance of multidisciplinary research of historical monuments. The calculation that lichen colonisation of Trajan's Bridge could have started as early as 800 years ago can be interesting for landscape research. This estimate was based on the lowest known growth rate of measured lichen thalli of *L. campestris*. However, bearing in mind that the radial growth rate of many foliose and crustose lichens increases early in life and later approaches a constant growth rate for an indefinite period of time or enters senescence when growth rate decreases, and is dependent of ever-changing environmental factors, the precise time period in which the studied pillar was subjected to the deteriogenic activity of lichens is difficult to establish. It is nonetheless important since we do not have records of any pillar cleaning treatments and the time period necessary for the establishment of such large thalli is considerable.

Based on the visual inspection of the damage to Trajan's Bridge and on the determination of biodeteriogens given in this study, in combination with the results of the research on building materials, along with the additional assessment of the influence of the factors of the external environment, the most adequate method of its preservation should be proposed. It is also important to mention that all present building materials need to be treated together, as mutually interdependent, since bricks and stone bonded with mortar form a unity in the structure, and "a single system".[39] The biological growth of the masonry is dependent of external conditions, but also of the bioreceptivity of the colonised materials, with the presence of water being the most important factor. The elimination of biological growth is an easy task but it is known that it will regrow again as long as favourable conditions exist. Moreover, resistance can be developed to the applied chemicals (biocides) and, in the end, can cause the growth of more aggressive forms of infestations.[40]

In this process, possible architectural/restoration works that will protect the investigated monument from external factors must be considered as well. Modern architectural interventions need to provide protection, but can also add value to the monument itself, thus encouraging its conservation.[41] However, determining the priorities in this process is extremely important, and our activities must physically protect the monument, but not endanger its influence and significance,[42] offering a carefully balanced relationship between

[37] Sterflinger, Piñar 2013, 9637–9646.
[38] Mirković 1986, 112–113; Гарашанин, Васић 1980, 8, 11.
[39] Odgers, Henry 2012, 47.
[40] Elena Charola 2016, 18.
[41] Hebbelinck et al. 2001, 31.
[42] Nikolić 2018, 34.

what we inherited and our contribution to its preservation for the future.

CONCLUSIONS

A visual inspection of the remains of the most preserved pillar of the Trajan's Bridge on the Danube bank in Serbia showed that bricks and stone present in its structure have a severe level of deterioration, among which the most pronounced are the loss of brick material and the one caused by biodeteriogens. Brick and stones, according to the visual observations on site, have a high level of bioreceptivity. However, laboratory research showed that the mortar itself is very receptive as well, and that the whole structure is in the later stage of biological succession and the advanced state of the deterioration. The exposed location and the environment favourable for the biocolonisation together with the high level of bioreceptivity of the used building materials make this monument very prone to infestation.

During future studies on the monument, it will be necessary to conduct deep research into all deterioration types registered in this review and plan the necessary interventions in accordance with the results of the research. Furthermore, only by including the analyses of all external and internal factors that can influence the state of the monument in further research can we adequately recognise the causes of deterioration and minimize its actions, which can sometimes lead to damage to the whole structure. One of the conservation plan segments must be connected to the threat from biological agents, with proposals for the future maintenance of the monument and maximum reduction of further biological colonisation.

Given that this study has shown a high degree of biodeterioration of Trajan's Bridge's remaining pillar, that other types of deterioration are present as well, and that the monument has been generally decaying, it is necessary to prepare plans for its protection in the very near future, and try to slow those processes down, which are mostly natural and thus inevitable, but whose direction of development and dynamics we can certainly influence with adequate maintenance.

In order to develop future conservation plans for the preservation of precious monuments of the Danube Limes in Serbia that aspire to be part of the UNESCO World Heritage List, it is very important to do the research on their building materials and construction, as well as the state of their preservation. As such, the study of the biological colonisation of the remains of Trajan's Bridge represents a valuable contribution to this development.

Acknowledgements

The authors are grateful to Dr Slađana Popović and Prof. Dr Marko Sabovljević from the University of Belgrade – Faculty of Biology for the identification of cyanobacteria, algae, and mosses, and Aleksa Jelikić from the Institute for the Protection of the Cultural Monuments of Serbia for support in the field research.

Translated by: Nikola Unković and Emilija Nikolić

BIBLIOGRAPHY:

Armstrong 1983 – R. A. Armstrong, Growth curve of the lichen Rhizocarpon geographicum. *New Phytologist* 94/4, 1983, 619–622.

Balksten, Strandberg-de Bruijn 2021 – K. Balksten, P. Strandberg-de Bruijn, Understanding deterioration due to salt and ice crystallization in Scandinavian massive brick masonry. *Heritage* 4, 2021, 349–370. https://doi.org/10.3390/heritage4010022I

Bjelić 2020 – I. Bjelić, Trajan's Bridge – Analysis of Apollodorus' design concept, in: *Illyricvm Romanvm, Studiola in Honorem*, M. Vasić, I. Popović, S. Petković, (eds.), Belgrade 2020, 22–39.

Bradwell 2009 – T. Bradwell, Lichenometric dating: a commentary, in the light of some recent statistical studies. *Geografiska Annaler. Series A, Physical Geography*, 91, 2009, 61–69. https://doi.org/10.1111/j.1468-0459.2009.00354.x

Dakal, Cameotra 2012 – T. C. Dakal, S. S. Cameotra, Microbially induced deterioration of architectural heritages: routes and mechanisms involved. *Environmental Sciences Europe*, 24, 2012, 1–13. https://doi.org/10.1186/2190-4715-24-36

Elena Charola 2016 – A. E. Charola, Stone deterioration characterization for its conservation. *Geonomos,* 24/2, 2016, 16–20.

Ettl, Gärtner 2014 – H. Ettl, G. Gärtner. G, *Syllabus der Boden-, Luft- und Flechtenalgen*, Berlin, 2014.

Frey et al. 2006 – W. Frey, J. P. Frahm, E. Fischer, W. Lobin, & T. L. Blockeel. *The Liverworts, mosses and ferns of Europe*, Vester Skerninge, 2006.

Гарашанин, Васић 1980 – М. Гарашанин, М. Васић, Трајанов мост – кастел Понтес, у: *Ђердапске свеске* I, (ур.) В. Кондић, Београд, 1980, 7–24. (M. Garašanin, M. Vasić, Trajanov most – kastel Pontes, u: *Đerdapske sveske* I, (ur.) V. Kondić, Beograd, 1980, 7–24.)

Гарашанин et al. 1980 – М. Гарашанин, М. Васић, & Г. Марјановић-Вујовић, Трајанов мост – Castrum Pontes (Извештај о археолошким истраживањима у 1980. години), у: *Ђердапске свеске* II, (ур.) В. Кондић, Београд, 1984, 25–54. (M. Garašanin, M. Vasić, & G. Marjanović-Vujović, Trajanov most – Castrum Pontes (Izveštaj o arheološkim istraživanjima u 1980. godini), u*: Đerdapske sveske* II (ur.) V. Kondić, Beograd, 1984, 25–54.)

Guiamet et al. 2012 – P. S. Guiamet, V. Rosato, S. G. de Saravia, A. M. García, & D. A. Moreno, Biofouling of crypts of historical and architectural interest at La Plata Cemetery (Argentina). *Journal of Cultural Heritage,* 13, 2012, 339–344. https://doi.org/10.1016/j.culher.2011.11.002

Gušić 1995 – S. Gušić, Trajan's Bridge – A Contribution towards its reconstruction, in: *Roman limes on the middle and lower Danube*, P. Petrović (ed.), Belgrade, 1996, 259–263.

Гушић 1985 – С. Гушић, Заштита културно-историјског наслеђа на подручју Ђердапа II. *Гласник Друштва конзерватора Србије* 9, 1985, 76–78. (S. Gušić, Zaštita kulturno-istorijskog nasleđa na području Đerdapa II. *Glasnik Društva konzervatora Srbije* 9, 1985, 76–78).

Hebbelinck et al. 2001 – S. Hebbelinck, A. H. Hendrickx, M. Mollaert, & J. Haase, J., New ideas on the use of systematically constructed tension structures to cover historic and archaeological sites. *WIT Transactions on Built Environment* 55, 2002, 29–38. doi: 10.2495/STR010031

Henry, Stewart 2011 – A. Henry, J. Stewart (eds.), *Practical building conservation: mortars, renders and plasters*, Farnham, 2011.

John, et al. 2003 – D. M. John, B. A. Whitton, & A. J. Brook. *The freshwater algal flora of the British Isles: an identification guide to freshwater and terrestrial algae*, Cambridge, 2003.

Joshi et al. 2012 – S. Joshi, D.K. Upreti, P. Das, & S. Nayaka, Lichenometry: a technique to date natural hazards. *Earth Science India,* 4, 2012, 1–16.

Karović, Nenadović 2014 – G. Karović, M. Nenadović, Multibeam sonar on the remains of the Trajan's Bridge, in: *The application of recent advances in underwater detection and survey techniques to underwater archaeology*, T. Akal et al. (eds.), Bodrum, 2014, 91–98.

Bjelić 2020 – I. Bjelić, Trajan's Bridge – Analysis of Apolodorus' Design Concept, in: *Illyricvm Romanvm, Studiola in Honorem*, M. Vasić, I. Popović, S. Petković, (eds.), Belgrade 2020, 22–39.

Komárek, Anagnostidis 2005 – J. Komárek, K. Anagnostidis. *Cyanoprokaryota 2. Teil: Oscillatoriales Süßwasserflora von Mitteleuropa*, Berlin, 2005.

Korać et al. 2014 – M. Korać*,* S. Golubović, N. Mrđić, G. Jeremić, & S. Pop-Lazić. Roman Limes in Serbia, Belgrade, 2014.

Kostić 2011 – Đ. S. Kostić. *Dunavski limes Feliksa Kanica*, Beograd, 2011.

Krebs 1999 – C. J. Krebs. *Ecological Methodology*, New York, 1999.

Ljaljević Grbić et al. 2017 – M. Ljaljević Grbić, G. Subakov Simić, M. Stupar, A. Jelikić, M. Sabovljević, M. Đorđević, & J. Vukojević, Biodiversity's hidden treasure: biodeteriorated archaeological tombstones of Serbia. *Current Science,* 112/2, 2017, 304–310. 10.18520/cs/v112/i02/304-310

Mehrotra, Glišić 2015 – Mehrotra, B. Glišić, Reconstruction of the appearance and structural system of Trajan's Bridge. *Journal of Cultural Heritage,* 16/1, 2015, 65–72. https://doi.org/10.1016/j.culher.2014.01.005

Mirković, 1986 – M. Mirković. Rimski gradovi na Dunavu u Gornjoj Meziji, Beograd, 1986.

Nikolić 2018 – E. Nikolić, Evaluation of the protection and presentation of historic buildings in the Viminacium Archaeological Park in relation to their spatial context. *Spatium* 39, 2018, 26–37. https://doi.org/10.2298/SPAT1839026N

Nikolić, Jovičić 2022 – Nikolić, M. Jovičić (eds.), *Science for conservation of the Danube Limes* (Programme and abstracts from the 1st International conference with workshop, June 27 – July 01, 2022, Viminacium, Serbia), Belgrade, 2022.

Odgers, Henry 2012 – D. Odgers, A. Henry (eds.), *Practical building conservation: stone*, Farnham, 2012

Piervittor et al. 1998 – R. Piervittor, O. Salvadori, & D. Isocrono, Literature on lichens and biodeterioration of stonework III. *The Lichenologist*, 30, 1998, 263–277. https://doi.org/10.1006/lich.1998.0131

Raper, Fennell 1965 – B. K. Raper, D. I. Fennell. *The Genus Aspergillus*, Baltimore, 1965.

Salvadori, Municchia 2016 – O. Salvadori, A.C. Municchia, The role of fungi and lichens in the biodeterioration of stone monuments. *The Open Conference Proceedings Journal*, 7 (suppl 1: M4), 2016, 39–54. 10.2174/2210289201607020039.

Samson et al. 2019 – R. A. Samson, J. Houbraken, U. Thrane, J. C. Frisvad, & B. Andersen. *Food and indoor fungi*, Utrecht, 2019.

Smith 2009 – C. W. Smith, *Lichens of Great Britain and Ireland*. London, 2009.

Steiger et al. 2011 – M. Steiger, A. Elena, Charola, & K. Sterflinger, Weathering and deterioration, in: *Stone in architecture: Properties and durability*, S. Siegesmund, R. Snethlage (eds.), Berlin, Heidelberg, 2011, 227–316. https://doi.org/10.1007/978-3-642-14475-2_4.

Sterflinger, Piñar 2013 – K. Sterflinger, G. Piñar, Microbial deterioration of cultural heritage and works of art-tilting at windmills? *Applied Microbiology and Biotechnology*, 97, 2013, 9637–9646. https://doi.org/10.1007/s00253-013-5283-1

UNESCO 2020 – UNESCO, Frontiers of the Roman Empire – The Danube Limes (Serbia), https://whc.unesco.org/en/tentativelists/6475/, accessed on October 10th, 2022.

Urzi, Leo 2001 – C. Urzì, F. de Leo, Sampling with adhesive tape strips: an easy and rapid method to monitor microbial colonization on monument surfaces. *Journal of Microbiological Methods*, 44, 2001, 1–11. https://doi.org/10.1016/S0167-7012(00)00227-X

van Hees et al. 2004 – R. P. J. van Hees, L. Binda, I. Papayianni, & E. Toumbakari, Characterisation and damage analysis of old mortars. *Materials and Structures*, 37, 2004, 644–648.

Резиме: НИКОЛА УНКОВИЋ, Универзитет у Београду, Биолошки факултет, Катедра за алгологију и микологију, Београд
ЕМИЛИЈА НИКОЛИЋ, Археолошки институт, Београд
МИЛИЦА ЉАЉЕВИЋ ГРБИЋ, Универзитет у Београду, Биолошки факултет, Катедра за алгологију и микологију, Београд
МЛАДЕН ЈОВИЧИЋ, Археолошки институт, Београд

ОЧУВАЊЕ ДУНАВСКОГ ЛИМЕСА У СРБИЈИ: ПРИКАЗ БИОДЕТЕРИОРАЦИЈЕ ТРАЈАНОВОГ МОСТА

Кључне речи. – биодетериорација, Трајанов мост, лишајеви, дунавски лимес у Србији, историјски малтери, историјска опека, историјски камен, римски споменик

Један од најзначајнијих споменика римског дунавског лимеса, који се данас протеже кроз неколико европских земаља, јесте Трајанов мост, подигнут у периоду од 103. до 105. године. Његови остаци се налазе у данашњој Србији и Румунији. Од некада величанственог моста са зиданим ступцима који су носили дрвену конструкцију, данас су остали само ступци на обалама, са делимично познатим стањем очуваности оних под водом. Остаци стубаца на српској страни Дунава откопани су и делимично рестаурирани пре четири деценије. Данас је стубац најближи реци, који није био подвргнут конзервацији, подложан различитим врстама детериорације, пре свега због високог нивоа спољних утицаја. Према визуелном опажању, најизраженији видови детериорације споменика су везани за губитак материјала опеке и инфестацију опеке и камена, док је малтер, чини се, најмање угрожен. Приликом поређења садашњег стања ступца са оним видљивим на фотографијама током последњих шест деценија, можемо проценити да се степен његове детериорације није драстично променио. Међутим, разлика у биолошком расту је видљива када се садашње стање упореди са оним забележеним близу тренутка када је вода продрла у простор одбрамбеног насипа изграђеног због подизања нивоа Дунава у склопу активности хидроенергетског система Ђердапа. С обзиром на наведено, примарни циљ овог истраживања је био да се утврди степен инфестације и угрожености споменика и утврди потенцијални ризик детериорације малтера у контакту са инфестираном опеком. У ту сврху су окарактерисани забележени биодетериогени. Посебан акценат је стављен на гљиве као познате главне узрочнике процеса детериорације како би се прецизно утврдио степен ризика који присутна фунгална заједница представља за овај споменик а све у циљу формирања и имплементације адекватног протокола за конзервацију. Констатована је интензивна колонизација опеке и камена епилитским лишајевима родова *Caloplaca*, *Lecanora*, *Parmelia*, *Porpidia*, *Verrucaria* и *Xanthoria*, као и маховинама родова *Brachythecium*, *Grimmia*, *Pohlia* и *Tortula*. На деловима споменика који нису имали видљиву инфестацију или симптоме биодетериорације такође је констатовано присуство бројних фунгалних структура, као што су соредије лишајева, кластери микроколонијалних гљива и споре за полно и бесполно размножавање меланизованих гљива, али и структуре трихалних *Cyanobacteria* и *Chlorophyta* rodova *Apatococcus*, *Desmococcus*, *Haematococcus* и *Trebouxia*. Укупно 12 филаментозних гљива из 6 родова су изоловане са површине споменика. Доминирају представници раздела *Ascomycota* (*Alternaria*, *Aspergillus*, *Cladosporium*, *Epicoccum* и *Penicillium*), док је забележена само једна гљива из раздела *Zygomycota*. Сличности између заједница забележених на опеци, малтеру и камену, процењене према Соренсеновом индексу сличности, високе су и у опсегу од 0,57 до 0,65, са највећом сличношћу забележеном између малтера и камена.

UDC: 904:739.5(497.11)"02/03"
39.032.04(37)"02/03"
https://doi.org/10.2298/STA2373161S
Original research article

SORIN NEMETI, Babeș-Bolyai University Cluj-Napoca, Faculty of History and Philosophy,
Department of Ancient History and Archaeology

THREE LEAD TABLETS DEPICTING THE DANUBIAN RIDERS[1]

e-mail: sorin.nemeti@ubbcluj.ro

Abstract. – In private collections in western Europe, there are many lead tablets depicting the Danubian Rider-Gods. Their number has increased exponentially in the last decades, partly due to archaeological chance finds in countries such as Bulgaria, Serbia, Romania, and Hungary. The three lead pieces presented here belong to Maxime Cambreling's collection (France) and illustrate known variants like Ertl G2, Ertl H9 and Ertl F1 of Pannonian lead tablets. The known finds point to an area near the towns of Singidunum and Sirmium from Pannonia Inferior, and the place of production of these Pannonian lead tablets is Sirmium (from where other types and variants also come).

Key words. – Danubian Riders, lead tablets, Pannonia, typology, chronology

In private collections in western Europe there are many lead tablets depicting the Danubian Rider-Gods. Their number has increased exponentially in the last decades, partly due to archaeological chance finding discoveries in countries such as Bulgaria, Serbia, Romania, and Hungary. Known as *Thraco-Mithraic plaques*, these artefacts belong to the series of cult/votive monuments dedicated to the gods conventionally known as the Danubian Riders. The cult of these gods, widespread in the Imperial Period in the Danubian provinces (Pannonia, Moesia, and Dacia, with fewer examples in Thrace, Dalmatia, and Noricum), is not mentioned in ancient literary texts and is only illustrated by a series of small and medium-sized reliefs made of stone, lead, bronze and silver, magical gems, and a very few associated with epigraphic texts. No cult buildings are known and no invocation of the names of the gods appears anywhere (except for some appellatives such as Dominus or Comes). Two major categories can be distinguished in the repertory of the reliefs: stone reliefs and medallions with one, two or three registers, and lead tablets or medallions with multiple registers[2]. The main typologies to follow are those by D. Tudor[3] and E. Will[4] (for the stone reliefs) and Ivana Popović[5] and R. F. Ertl[6] (for the lead tablets).

The three lead pieces presented here belong to Maxime Cambreling's collection (France) and likely come from the Pannonian area of Sirmium.

1. *Aedicula*-shaped lead tablet (Fig. 1). Intact. Dimensions: 8.4 x 7.1 cm, 124 g; The tablet has a curved pediment and two acroteria at the top. The field is delimited by a rectangular frame and a string-like circular frame ending in two snake heads.

---

[1] Translated by Alina Piticaru (Babeș-Bolyai University Cluj-Napoca).

[2] Antonescu 1889; Tudor 1937, 189–356; Will 1955, 30–33, 312–331; Tudor 1969; Tudor 1969; Zotović 1978, 1351–1378; Oppermann 1981, 519–521; Popović 1992, 1078–1081; Tatcheva 2000, 231–245; Nemeti 2019, 213–228.

[3] Tudor 1976.

[4] Will 1955, 30–33, 312–331.

[5] Popović 1992, 1078–1081.

[6] Ertl 1996.

Manuscript received 20th February 2023, accepted 27th October 2023



Fig. 1. Lead tablets from the Cambreling collection (photos Maxime Cambreling) – Ertl G2



Fig. 2. Lead tablets from the Cambreling collection (photos Maxime Cambreling) – Ertl H9

a) In the centre of the pediment, a fish is represented, flanked by four stars, grouped in pairs. A larger star appears in each acroterion. In the corners of the rectangle, outside of the medallion frame, there are four protomes, likely a personification of the four Winds.
b) In the medallion-shaped field, the upper part shows the bust of Sol with a crown of rays and that of Luna with a moon crescent. Between them is the image of the goddess Nemesis bringing one hand to her mouth. The goddess is seated on a pedestal. Behind the bust of Luna there is a lion with its front paws on a vessel (*kantharos*?).
c) In the central field, there is a goddess on a pedestal, towards which two riders are facing, both wearing Phrygian caps and holding spears. Beneath the hooves of each horse there is a fallen figure, face down and hands outstretched in front of him. Behind Sol and the rider on the left there is a *mensa tripes* with three unidentified objects on it, and below it, behind the rider, a male figure is raising his hand in salute. Below the lion from the first register, behind the rider on the right, there is a rooster on a pedestal and below it another bird (probably a raven).
d) In the lower register there are several symbols, from left to right: a fish (?), a ram protome, a *kantharos*, a *candelabrum* with a lamp, the *criobolium* scene (the sacrifice of a ram hanging from a tree and a man skinning it), and three rings.

2. Lead medallion (Fig. 2). Missing a small part on the left side. Dimensions: diam. 8.4 cm, 81 g. The medallion is encircled by a frame with a fir tree-like decoration and by a string-like frame ending in two snake heads. The figures depicted are difficult to identify, but similar iconography on the better preserved medallions allows the description as follows:
a) In the upper register is the bust of Luna facing right with the moon crescent on her head and, symmetrically, that of Sol with a crown of seven rays. Between the two busts of the astral deities are seven stars. Behind the bust of Luna there is a bird with its wings folded (raven? eagle?), and behind the bust of Sol, a little lower, a rooster.
b) In the central register there is a goddess with her feet on a globe, towards which two riders wearing tunics and Phrygian caps are facing. Beneath the horses' hooves are two naked men, facing downwards. Behind the rider on the left there is a *kan-*



Fig. 3. Lead tablets from the Cambreling collection (photos Maxime Cambreling) – Ertl F1

tharos vessel, and, behind the rider on the right, the goddess Nemesis with her hand to her mouth.

c) In the lower register, in a central position, below the goddess, there is a *mensa tripes* with three circular objects (rings?, loaves of bread?). From left to right there are: a *candelabrum* with a lamp, the *criobolium* scene (the sacrifice of a ram hanging from a tree and a man skinning it; the ram is not decapitated), a rooster, a lion, a fish, a quadruped (dog?), and a ram protome.

3. Lead tablet (Fig. 3). Intact. Dimensions: 8.9 x 7.4 cm: 164 g. The tablet has a curved pediment and two acroteria at the top. The field is delimited by a string-like rectangular frame.

a) In the centre of the pediment, a fish is represented, facing right, flanked by two stars.

b) Inside the frame is a three-register scene, but the registers are not divided by frames. In the upper register one can see the bust of Luna on the left, with a moon crescent on the shoulders, and the bust of Sol, on the right. Between the astral deities is a representation of the so-called *symbolic triad,* a vessel in the centre flanked by two rearing snakes.

c) In the middle of the main register is a woman standing on a *monopodium*-like pedestal, with her arms outstretched horizontally. The goddess is flanked by two riders dressed in a tunic, flying cloak and Phrygian cap. Their horses trample two naked men prostrate, face downwards on the ground. Behind the horsemen are two attendants, on the right a woman holding her right hand in front of her mouth (Nemesis), and on the left a man (wearing a ram's mask?).

d) In the lower register, from left to right, there are: a three-legged table bearing two beakers and a round object, a candelabrum with a lamp upon it, a man skinning a ram hanging from a tree, a kantharos with three round objects upon it, and a rooster above a ram's head.

The three lead tablets belong to variants that are already known in specialised literature, classified within the Ertl G2, Ertl H9 and Ertl F1 types.

The *aedicula*-shaped lead tablet and the central field in the medallion belong to the G2 type, as defined by R. F. Ertl. The central medallion contains scenes and symbols arranged in three registers. R. F. Ertl knows of an older piece from Sirmium (Pannonia Inferior) (Sremska Mitrovica, Serbia)[7], to which he adds 14 more unpublished pieces from his collection, presumably from the same site[8]. There is another piece belonging to the G2 type, originating from Kosmaj, Rogača (Serbia), on the territory of ancient Singidunum[9].

The Ertl H9 type lead medallion is recognised in R. F. Ertl's monograph via nine examples coming exclusively from his collection and for which Sirmium (*angeblich Sirmium*) is indicated as the presumed place of discovery. This medallion variant does not appear in D. Tudor's catalogue, but two identical pieces are known from later literature. The first one was found near Sirmium, at Izvorac (between the villages of Martinci, Divoš and Laćarak)[10] and it is fragmentary. The second piece also came from the surroundings of Sirmium, from the necropolis of a Roman rural settlement excavated at Kuzmin in 1987. The lead medallion was found in grave 17a under a ceramic pot placed near the skeleton's feet. The inventory also included

---

[7] Tudor 1969, no. 126.
[8] Ertl 1996, 90–92, no. G02-001-015.
[9] Zotović 1973–1974, 38–39, 43, pl. II/3.
[10] Popović 1988, 112–113.

three bronze rings and a grey pot. The grave belongs to a horizon of tombs dated using coins from the middle of the 3rd century AD (a Gordian III coin minted at Viminacium in 242–243 was found in nearby grave 18)[11].

In the old corpora five tablets are known, belonging to the Ertl F1 type, discovered in Vincovci – *Cibalae* (Croatia)[12], Čalma (near Sremska Mitrovica – *Sirmium*, Serbia)[13], and Celei – *Sucidava* (Romania)[14]. Another two tablets are from Pannonia, with an unknown findspot[15]. In the R. F. Ertl collection 68 tablets are listed, intact or fragmentary, belonging to the Ertl F1 type, with a presumable findspot in Sremska Mitrovica (Serbien)[16]. The huge number of tablets belonging to the same type is probably due to the accidental discovery of a workshop located in the area of ancient *Sirmium*.

* * *

Discussing the finds from Kuzmin and Izvorac, Ivana Popović establishes that these belong to a distinct variant of the group of monuments, produced for a short time in a workshop in Pannonia Inferior, most likely in Sirmium. As for the chronological relationship between this variant and the other Danubian Riders circular medallions, she concludes that no definitive answer can be given[17].

In a previous study, we tried to suggest the typological evolution of the Danubian Riders reliefs, starting from the symbolism reproduced on different variants. We have noted that the three-register stone reliefs have some elements in common with the lead tablets with three or more registers, especially in the upper register. Thus, the Ertl A3 lead tablets with four registers have an upper register inspired by the B2a variant II stone reliefs with three registers: a kind of anthropomorphic triad with an eagle in the centre flanked by two male busts and two acolytes holding fish in their hands[18]. At the same time, the upper register of the three-register tablets belonging to the Ertl F1 type reproduces the symbolic triad (a vessel flanked by two rearing snakes) found in the upper register of the B2a variant I three-register stone reliefs[19].

Starting from these upper register details, we can assume that when the Ertl A3 and Ertl F1 lead tablets appeared, the iconography of the B2a stone reliefs, variants I and II, already existed. In the first generation of lead tablets there are only Ertl F1 and Ertl A3 type tablets and an Ertl D variant, although it is no possible to specify which one. All the others are variants derived from these first generation lead tablets according to the following scheme (Fig. 4):

Ertl F1 → Ertl G4 → Ertl G1–3, 5–7 → Ertl H
Ertl F1 → Ertl F2–3 → Ertl B1–3
Ertl A3 → Ertl C1–2
Ertl D → Ertl E1–2

The typological evolution is difficult to express chronologically, as few specimens have been found in datable contexts and the creation of new types in the *plumbarii* workshops may have occurred at short time intervals. The iconography of the lead tablets is generally uniform, and the differences of types and variants are given by the shape of the tablets, the architectonic decoration, or the different combinations of symbols, indicating a synchronous existence or the appearance of types and variants at short time intervals.

The Ertl G2 type relief from the Cambreling collection and the variant from which F1 was derived have in common the shape of the relief with a curved pediment and two acroteria at the top. The variant that Ertl G4 was directly derived from shares the shape of the relief with the Ertl F1 variant (but the scenes are within a central medallion), as well as retaining the symbolic triad in the upper register, a vessel flanked by two rearing snakes (triad taken from the B2a type stone reliefs, variant I). The variants with an *aedicula*-shaped relief with a curved pediment and two acroteria and with the scenes within a medallion no longer have the symbolic triad, but duplicate the layout and most of the symbols from the Ertl G4 variant.

The variants of the Ertl H type derived directly from the Ertl G type (G1–3, 5–6) contain the same iconography, with the symbols and scenes combined differently, but without the *aedicula*. The Ertl H type (variants Ertl H1, H1V, H6, H9–12) are the medallions of the G type made separately from the rectangular relief. Even the border of the G type medallions, adorned similarly with pearly or string-like decoration, is preserved.

---

11 Popović 1991, 235–245, fig. 1
12 Tudor 1969, no. 137.
13 Tudor 1969, no. 138.
14 Tudor 1975, no. 208.
15 Tudor 1969, nos. 169,170.
16 Ertl 1996, 69–81, nos. F01-006 – F01- 072, pl. LII–LXVIII.
17 Popović 1991, 241.
18 Nemeti 2015, 134.
19 Nemeti 2015, 135.
20 Tudor 1969, nos. 126–128.
21 Popović 1991, 235–245.

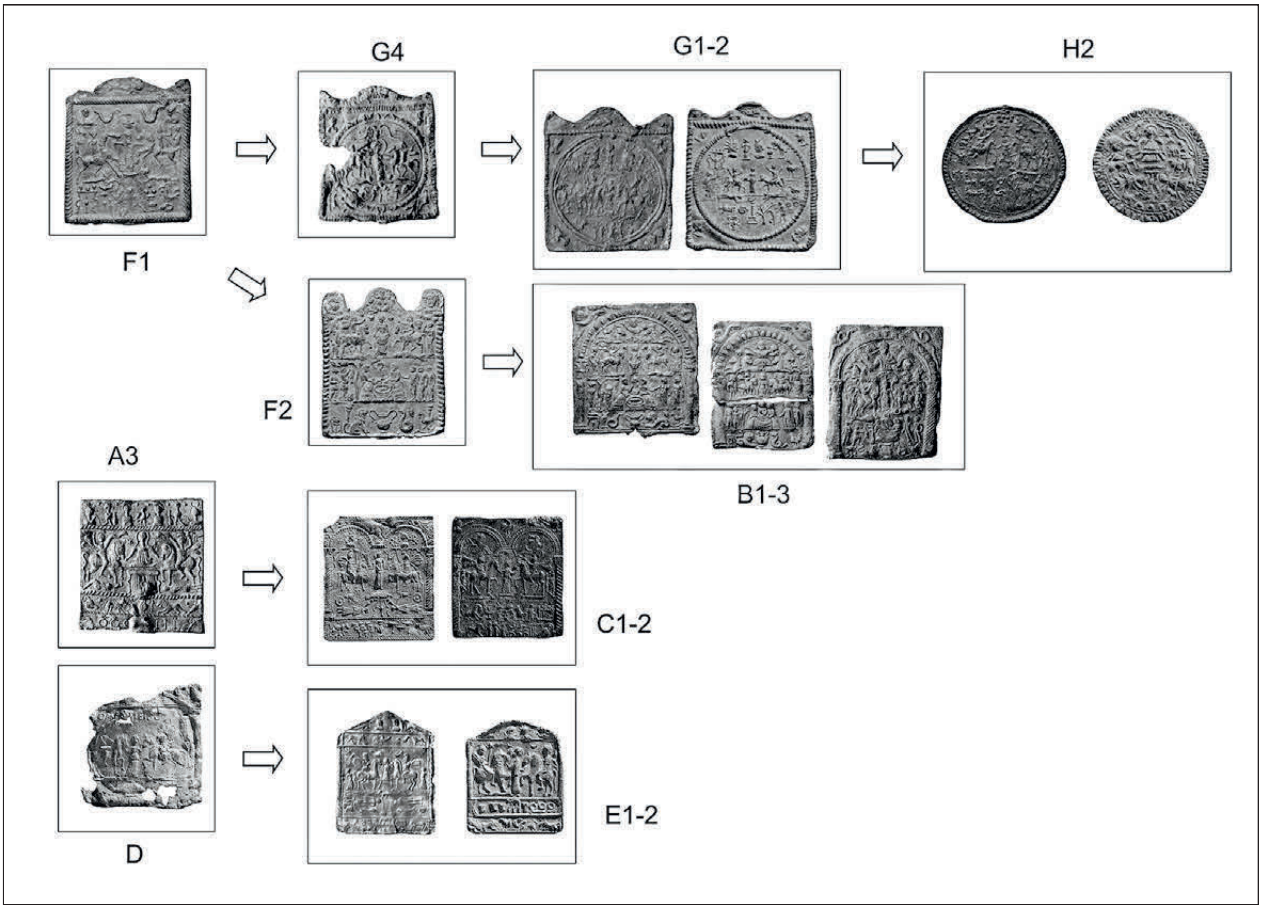


Fig. 4. Typology of the Pannonian lead tablets

The Ertl G1, 2–5 variants have a large *mensa tripes* behind the left rider that is also found on the Ertl H1 and H1V variants, which derived directly from these. For the Ertl H9 variant, to which relief 2 from the Cambreling collection belongs, there is no direct prototype within the G type (only the *mensa tripes* is under the feet of the goddess, as in the Ertl G4 variant).

In conclusion, the three reliefs from the Cambreling collection belong to known variants of the Ertl F, Ertl G and Ertl H types of Pannonian lead tablets. The known finds point to an area near the towns of Singidunum and Sirmium in Pannonia Inferior (Belgrade and Sremska Mitrovica in Serbia), and the place of production of these Pannonian lead tablets was Sirmium (where other types and variants also came from)[20]. Certainly, the Ertl F1 type relief is anterior to the Ertl G2 type, which on his turn is anterior to the Ertl H9 type, without being able to specify how this anteriority is expressed in years or decades. The Kuzmin relief belonging to the Ertl H9 type existed in the first half and towards the middle of the 3rd century AD[21].

BIBLIOGRAPHY:

Antonescu 1889 – T. Antonescu, *Cultul Cabirilor în Dacia. Studiu arheologic şi mythologic asupra unor monumente antice, în mare parte inedite şi descoperite în regiunile Istrului*, Bucureşti, 1889.

Ertl 1996 – R. F. Ertl, *Donaureiter Bleivotivtafeln. Versuch einer Typologie*, Petronell, 1996.

Nemeti 2015 – S. Nemeti, I rilievi dei Cavalieri Danubiani. Spunti per l'interpretazione diacronica delle varianti regionali, in: Cristina-Georgeta Alexandrescu ed., *Cult and Votive Monuments. Proceedings of the 13th International Colloquium on Roman Provincial Art*, Bucarest, 2015, 129–138.

Nemeti 2019 – S. Nemeti, *Le syncrétisme religieux en Dacie romaine*, Cluj-Napoca, 2019.

Oppermann 1981 – M. Oppermann, Thrakische und Danubische Reitergötter und ihre Beziehungen zu orientalischen Kulten, in: M. J. Vermaseren (ed.), *Die orientalische Religionen im Römerreich*, Leiden, 1981, 510–536.

Popović 1988 – I. Popović, Nove olovne ikone kulta Dunavskih Konjanika iz Sirmijuma, *Starinar* 39, 1988, 105–116.

Popović 1991 – I. Popović, Une image datée des Cavaliers Danubiens, *MEFRA* 103/1, 1991, 235–245.

Popović 1992 – I. Popović, LIMC VI/1 (1992), *s. v. Heros Equitans,* 1078–1081.

Tatcheva 2000 – M. Tacheva, Le syncrétisme religieux dans les provinces balkaniques de l'Empire romain. Les reliefs des soi-disants Cavaliers Danubiens, *ŽivaAnt* 50, 2000, 231–245.

Tudor 1937 – D. Tudor, I Cavalieri danubiani, *EDR* 7, 1937, 189–356.

Tudor 1969 – D. Tudor, *Corpus monumentorum religionis Equitum Danuvinorum. I. The Monuments*, Leiden, 1969.

Tudor 1969 – D. Tudor, *Corpus monumentorum religionis Equitum Danuvinorum. II. The Analysis and Interpretation of the Monuments*, Leiden, 1976.

Will 1955 – E. Will, *Le relief cultuel gréco-romain. Contribution à l'histoire de l'art de l'Empire romain*, Paris, 1955.

Zotović 1973–1974 – Lj. Zotović, Tri olovne ikone iz zbirke Muzeja grada Beograda, *Starinar* 24–25, 1973–1974, 33–44.

Zotović 1978 – Lj. Zotović, Les éléments orientaux dans le culte des Cavaliers Danubiens et quelques aspects nouveaux de ce culte, in: M. B. De Boer – T. A. Edrige (ed.), *Hommages à Maarten J. Vermaseren*, III, Leiden, 1978, 1351–1378.

Резиме: SORIN NEMETI, Babeş-Bolyai University Cluj-Napoca, Faculty of History and Philosophy, Department of Ancient History and Archaeology

THREE LEAD TABLETS DEPICTING THE DANUBIAN RIDERS

Keywords. – Danubian Riders, lead tablets, Pannonia, typology, chronology

In private collections in western Europe there are many lead tablets depicting the Danubian Rider-Gods. Their number has increased exponentially in the last decades, partly due to archaeological chance finds in countries such as Bulgaria, Serbia, Romania, and Hungary. The three lead pieces presented here belong to Maxime Cambreling's collection (France) and illustrate known variants of Pannonian lead tablets:

1. *Aedicula*-shaped lead tablet (Fig. 1). Intact. Dimensions: 8.4 x 7.1 cm, 124 g
2. Lead medallion (Fig. 2). Missing a small part on the left side. Dimensions: diam. 8.4 cm, 81 g.
3. Lead tablet (Fig. 3). Intact. Dimensions: 8.9 x 7.4 cm: 164 g.

The three lead tablets belong to variants that are already known in specialised literature, classified within the Ertl G2, Ertl H9 and Ertl F1 types.

We want to suggest the typological evolution of the Danubian Riders reliefs, starting from the symbolism reproduced on different variants.

Starting from these upper register details, we can assume that when the Ertl A3 and Ertl F1 lead tablets appeared, the iconography of the B2a stone reliefs, variants I and II, already existed. In the first generation of lead tablets, there are only Ertl F1 and Ertl A3 type tablets and an Ertl D variant, although it is no possible to specify which one. All the others are variants derived from these first generation lead tablets, according to the following scheme (Fig. 4):

Ertl F1 → Ertl G4 → Ertl G1-3, 5-7 → Ertl H
Ertl F1 → Ertl F2-3 → Ertl B1-3
Ertl A3 → Ertl C1-2
Ertl D → Ertl E1-2

The known finds point to an area near the towns of Singidunum and Sirmium from Pannonia Inferior, and the place of production of these Pannonian lead tablets was Sirmium (from where other types and variants also come).

КРИТИКЕ И ПРИКАЗИ – COMPTES RENDUS

Людмил Ф. Вагалински, ХЕРАКЛЕЯ СИНТИКА. ИСТОРИЯ ЧРЕЗ АРХЕОЛОГИЯ / Lyudmil F. Vagalinski, HERACLEA SINTICA. HISTORY THROUGH ARCHAEOLOGY. *Archaeologia Bulgarica*, Supplement 4.1 Text, Supplement 4.2 Figures. София / Sofia 2022. 124 стране текста и 322 стране илустративних прилога

Научна јавност, од археолога заинтересованих за протоисторију и антику, преко нумизматичара, епиграфичара и историчара старог века, до историчара архитектуре и рестауратора, с нестрпљењем је ишчекивала нову монографску публикацију као резултат последње фазе вишедеценијских истраживања Хераклеје Синтике. Иако су археолошка ископавања овог значајног локалитета у више наврата спровођена током друге половине 20. века, о историји Хераклеје знало се мало и она је завредела да се систематски истражи у 21. веку. Мултидисциплинарна истраживања локалитета, започета 2007. године, реализовао је истраживачки тим са Људмилом Вагалинским на челу. Резултати су до сада публиковани у серијским публикацијама и зборнику радова из 2015. (Vagalinski, L., Nankov, E. [eds.] 2015. Heraclea Sintica: from Hellenistic polis to Roman civitas [4th c. BC – 6th c. AD], International conference, Petrich, 19–21. 09. 2013 [= Papers of the American Research Center in Sofia 2]. Sofia.), који представља успешно спроведену акцију прикупљања и сумирања научних података о граду, који су до тада остали необјављени или расути у малобројним и слабо познатим и доступним публикацијама. У наставку, промишљеним усмеравањем истраживачких активности и пажљивим избором истраживачких питања и задатих циљева, Вагалински је постепено обликовао посебну студију, чију двотомну публикацију *Хераклеја Синтика. Историја кроз археологију* добијамо у низу монографија *Archaeologia Bulgarica Supplements.* Аутор је изабрао да у првом тому публикује текст који прате илустрације из другог тома, тако да се књиге читају паралелно, уз добру прегледност и лаку манипулацију. Језик публикације је бугарски, иако су на насловној страни и садржају наслови и поднаслови наведени двојезично, на бугарском и енглеском, што наводи на очекивање двојезичне публикације. Читаоцу са словенског говорног подручја читање неће представљати проблем, иако би превод комплетног текста на енглески или неки други светски језик био више него добродошао. Текст је употпуњен листом референтне литературе, као и сажетком на енглеском.

У другом тому налазе се илустративни прилози: географске карте, ситуациони планови и цртежи објеката, фотографије налазишта и објеката *in situ*, виртуелне реконструкције објеката, табле са типологијом керамичког материјала, графички прикази резултата специјалистичких анализа. Цртежи и фотографије обилују детаљима, чиме је основни текст растерећен од сувишних описа, података о димензијама архитектуре или артефаката и сл.

Причу о Хераклеји кроз археологију Људмил Вагалински структурирао је почевши од дефинисања места на ком се локалитет налази, историјата истраживања и предмета истраживања. Хераклеја Синтика или Хераклеја на Стримону налази се на локалитету Рупите, у атару истоименог села у општини Петрич, у југозападној Бугарској. Хераклеја се у највећој мери простирала на јужним обронцима брда Кожух, као и у зонама јужно и западно од брда. У антици, град је лежао у близини границе Тракије и Македоније. Ова студија заснована је на резултатима археолошких истраживања Хераклеје спроведеним у периоду 2007–2021. године. Фокус је на истраженој архитектури и успостављању хронолошког система. Артефакта откривена током ископавања – керамика, накит и функционални делови ношње, оружје, новчићи, стаклено посуђе, зидно сликарство, скулптура, архитектонски елементи и др. – биће публикована у засебним студијама са каталозима. Посебни налази чине саставни део ове монографије, јер

аргументују ауторове закључке. Неки од њих су заиста провокативни, као на пример налаз фибуле познолатенске схеме.

Монографија је настала са циљем утврђивања поуздане хронологије развоја града. Већ у првој години археолошких истраживања идентификована су четири периода насељавања. У том тренутку, живот на насељу се оквирно везивао за прва четири века нове ере. Захваљујући истраживањима која су уследила, ова археолошка хронологија проистекла из теренских опсервација проширена је и дорађена. Први период опредељен је у време од 88. године пре нове ере до средине 1. века (после 41. г. н. е.). Други период везује се за време након 41. г. н. е. до краја 3. века (после 282/283. године). Трећи период наступа после 282/283. г. и траје до краја 4. века (после 388. г.), када почиње четврти период, који траје до друге четвртине 5. века (између 425. и 457. године). Петом периоду приписује се време након 457. г., све до краја 5. века. Да би се избегла забуна, истраживачи су задржали почетну нумерацију периода, упркос томе што историја Хераклеје почиње готово 250 година пре такозваног „првог" периода. Да би се досегао задати циљ ове студије, стратиграфски метод изабран је као основни, а хронологија је успостављена археолошким путем. Апсолутна хронологија је у највећој мери заснована на више од 3000 стратификованих новчића.

Откривеним архитектонским остацима Хераклеје посвећено је друго поглавље књиге. У оквиру централног трга истражени су: северни портик, источни портик, јужни портик, западни портик, отворени простор између портика, цивилна базилика, ранохришћанска базилика, као и фрагментовани остаци канализације и водовода. Посебно потпоглавље посвећено је важним одликама објеката са централног трга и њиховом хронолошком значају. На исти начин третирани су и остаци стамбених зона северно и источно од централног трга, остаци западно од цивилне базилике, као и акропољ и фортификациони систем. Хераклеју Синтику основали су македонски колонисти средином 4. века пре нове ере, за време владавине Филипа II Македонског. Од средине 2. в. п. н. е. град је припадао римској провинцији Македонији. Хеленистичка агора налазила се у подножју акропоља. Вредно је поменути да је у проспекцији акропоља и зоне са остацима утврђења коришћена савремена технологија LiDAR управо у циљу давања одговора на питања хронологије, а да су археолошка ископавања дала потврду људског присуства на акропољу од касног неолита, преко касног халколита и ранохеленистичког периода. Занимљиво, трагови насељавања овог места током бронзаног доба нису пронађени у истраженој зони. Истражени су остаци римског бедема утврђења, изграђеног пре 28–27. г. п. н. е., вероватно после непријатељског напада током Првог Митридатовог рата (89–85. г. п. н. е.), и касније оштећеног, као и касноантички објекат са две грађевинске фазе. Након краја 6. века на акропољу нема никаквих насеобинскох трагова. Митридатов рат условио је и знатно премоделовање агоре. Други период насељавања унео је највеће промене у план централне агоре. Конструисан је правоугаони форум са портицима. Моћан непријатељски напад крајем 3. века оставио је трагове по читавом форуму. Након тога, започела је његова амбициозна рестаурација и обнова. Природне катастрофе – два разорна земљотреса, један крајем 4. века и други после 425. г., и поплаве које су уследиле – такође су оставиле трагове на архитектури. Проучени стамбени делови града откривају добру инфраструктуру, са улицама, степеништима, каналима. Начин градње објеката и налази у њима указују на градско становништво које није било претерано богато, с обзиром на мали број нађених луксузних предмета.

Погребним праксама посведоченим на некрополама и сахранама у самом граду и надгробним споменицима са некропола Хераклеје посвећено је треће поглавље. Западна и јужна некропола Хераклеје садрже сахране од ранохеленистичког до касноримског периода, покривајући читав период ефективног функционисања града. На основу положаја некропола и чињенице да се зона македонске Хераклеје у извесној мери поклапала са зоном из римског периода, закључено је да се може рачунати на уједначен број становника током свих векова живота. Топографски континуитет некропола указује на етнички и културни континуитет, што поткрепљују подаци о карактеристикама погребних пракси.

У делу рада посвећеном територији под управом Хераклеје Синтике и њеној административној структури вешто су комбиновани комплементарни подаци добијени методама археологије, историје, епиграфике и нумизматике. Резултати археолошке теренске проспекције указали су на начин како се развијао систем насељавања у региону. За разлику од периода од оснивања Хераклеје до Тиберијевог принципата, током ког о административној структури нема директних сведочанстава, о градским властима и институцијама у Хераклеји током римског царског периода располаже се поузданим чињеницама захваљујући епиграфским подацима. У сличном интерпретативном кључу писана су и поглавља о привреди, с посебним освртом на занате, пољопривреду, трговину, о религији и празницима, и етничком саставу становништва. У Хераклеји је посведочено постојање више светилишта и култних места, почевши од трачког, које је било напуштено након насељавања македонских колониста, преко храмова Немезе и Херакла, до ранохришћанске базилике. Уз поменуте богове и неговање царског култа, потврђено је поштовање Артемиде, Диониса, Хермеса, трачког коњаника, Викторије, Митре, Сераписа, Зевса Хипсистоса, Деметре, а постоји и епиграфско сведочанство празновања празника розалија. Расположива археолошка и епиграфска грађа води ка закључку да је локална трачка популација након македонске колонизације остала у широј административној зони града. У граду су све време у употреби готово искључиво македонска лична имена. Тек је Каракалин едикт створио нормативне услове за „трачку ренесансу" током 3–4. века.

Сведени закључак, у ком је наглашена способност житеља Хераклеје да свој град прилагоде у променљивим политичким и економским приликама током векова, послужио је аутору да подвуче и велику истину како несреће за људе у прошлости потенцијално доносе срећу за истраживаче прошлости. У случају Хераклеје, земљотреси и поплаве „запечатили" су град у другој четвртини 5. века, чувајући његову архитектуру у добром стању за данашње истраживаче. Резултати књиге Људмила Вагалинског открили су важне делове приче о прошлости Хераклеје Синтике, уз обећање аутора да најзанимљивији делови те приче тек долазе. Из тог разлога са још већим нестрпљењем очекујемо нове томове и инспирацију за интерпретацију других локалитета са бројним изазовима из прошлости.

Марија ЉУШТИНА

Sanja Pilipović, NADGROBNE STELE VIMINACIJUMA / THE FUNERARY STELES OF VIMINACIUM
(Institute of Archaeology Monographs 77.) Belgrade: Institute of Archaeology, 2022.
260 pages, 50 plates with colour photos – ISBN 978-86-6439-074-3

A comprehensive *corpus* on the funerary steles of Viminacium (Stari Kostolac) has never been published before. Known as the capital of the province of Moesia Superior, Viminacium is one of the best preserved and researched Roman towns of the Balkans. It was founded as a military garrison in the first century CE, promoted to the rank of *municipium* under Hadrian then, in the middle of the 3rd century, it was raised to the rank of *colonia*. The settlement located next to the *Via Militaris* was of great strategic importance and, considering its location next to the Danube, it became a commercial hub as well. Its permanent garrison – the Legio VII *Claudia* – was stationed here from the middle of the 1st century onwards, but it also hosted the Legio IV *Flavia* for some time. In the legionary and auxiliary camps, approximately 6,000 soldiers were stationed, and in the civilian settlement (*canabae* and *vici*) some 30–40,000 people lived. It had a Roman amphitheatre with room for 12,000 people. This relatively large population produced a considerable number of epigraphic remains – of which this volume contains only the funerary steles – which provide us with insights into the everyday life of one of the most important Roman settlements in the Balkans.

Although the Viminacium inscriptions have been examined in the past by noted Serbian experts, this is the first volume to treat all extant inscriptions holistically: besides understanding the content (putting the texts into a social, economic and political context), the author of the volume also undertakes the task of producing a detailed typology. Pilipović accomplished this difficult task not only based on the traditional iconographic and content analysis, which is still an important part of the work of epigraphists, but also by petrological analysis, which helped her to specify the workshops of the inscriptions as well. This is what makes this book unique and very useful for all epigraphists and historians of the Roman age. The volume, written in Serbian, but also containing a detailed English summary (pp. 171–177), includes introductory chapters of almost 100 pages, followed by a catalogue both in Serbian (pp. 95–132) and English (pp. 133–170). Entries in the catalogue comprise the size, provenance, date, location, description and literature of the funerary steles. In the 50 include tables, high-quality colour photographs and drawings reveal the individual inscriptions.

Unfortunately, most of the sixty-nine funerary steles of Viminacium are preserved in a fragmentary state. The earliest ones date back to the end of the 1st or to the beginning of the 2nd century CE, with the majority of the inscriptions from the 2nd and 3rd century. The monograph discusses the steles from Viminacium, as well as those that are today built into the fortress in Smederevo, and in the churches in the immediate vicinity; the old city cemetery church in Smederevo and the one in the Rukumia monastery. This region has always been an important basis for comparison for Pannonian (especially Hungarian) research. I remember when I was András Mócsy's student at the University of Budapest, he always used to say that Pannonia should not be compared with Gaul or Hispania, but with Moesia or Raetia. This is why he wrote a comparative history of Pannonia and Moesia Superior.[1] It turns out that the connection between the two provinces is even closer than we previously imagined. Pilipović's research revealed that steles with a lion on top were made of marble quarried in the Eastern Alps (pp. 38–40, 80–82). At least one Viminacium stele was confirmed as having been made of marble from the famous Gummern quarry, one of the three most important quarries of Noricum, known since 1929.[2] The similarity of these Viminacium steles to the Eastern-Alpine monuments can be seen not only in their structure, but also in their iconographic models, especially by their secondary decorative motifs. The connection with the Eastern-Alpine workshops can be seen on steles with a moulded inscription panel and pediment (cat. 4, 17) and on those of the aedicule type (cat. 24, 25, 34). The stele of the freedman *Q. Cornelius Zosimus* (cat. 25) belongs to a special form of this group, with an aedicule characterised by acroteria in the shape of a pair of lion statues with a cubic pedestal between them. They follow models originating from the territory of the three important cities of Pannonia and Noricum: *Poetovio* (Ptuj), *Flavia Solva* (Wagna), and *Savaria* (Szombathely). Pilipović's research has shown that the steles arrived in Viminacium as semi-finished products from the end of the 1st to the 3rd century. This is consistent with the observation regarding cargoes of Roman shipwrecks, in which semi-finished goods (sarcophagi, steles, architectural elements, etc.) were transported to the west from the famous marble quarries of Asia Minor.[3] Interestingly, two inscriptions came from the Budakalász travertine quarry (cat. no. 13, 22), from which most of the funerary stele were made at *Aquincum* (Óbuda) (p. 83).[4] Moreover, these epigraphic remains of Viminacium show iconographic similarities with the inscriptions of *Aquincum* and *Sopianae* (Pécs). On the other hand, there are monuments at Viminacium that seemingly arrived from Dacia, made of Southern Carpathian marble, from the Bukova quarry.[5] This could be assumed for three marble steles (cat. nos. 1, 3, 66).

It is a good idea to explore the origin of the funerary steles, but it can also be a trap, because the iconographic motifs used on the monuments were only partially determined by the origin of the stones (the stone carving workshop); the taste and origin of the customer also had a decisive influence on the selection of motifs. In relation to Noricum and Pannonia, the abundance of classical mythological representations is striking, which the volume also draws attention to (pp. 59–63, 68–71).[6] We find four mythological reliefs at Viminacium: the rape of Persephone and Europa (cat. no. 28), a mythological couple, perhaps Helen and Menelaus (cat. no. 30), the return of Alcestis (cat. no. 61), as well as *Lupa Capitolina* with the twins (cat. no. 29).[7] (The latter funerary monument belonged to an *Augustalis*.) There is a long-lasting debate among experts as to whether the relatively large number of mythological depictions is evidence of the deep Romanisation in these provinces, or just the opposite: mainly Italian immigrants

(settled veterans and civilians) wanting to express their attachment to Rome in this way.[8]

As Pilipović writes (p. 176.) indigenous and oriental inhabitants emphasised their origins with peculiar iconographic motifs on their tombstones. The wife of *T. Baebius Eutyches Augustalis*, *Baebia Marcella*, is shown in her funerary portrait wearing jewellery that confirms her Celtic origin (cat. no. 29).[9] *Thatare* earrings were a typical provincial item of jewellery, while the *omega* bracelet and subtle *torques* necklace suggest her Celtic origin. A similar example can be seen on the stele of *L. Sevius Rufus*, a municipal priest (*sacerdos municipii*), and a member of the city administration of Viminacium (cat. no. 11). At the bottom of the inscription panel on this stele there is a carved a motif of two raised hands. Pilipović is right when stressing that this motif can most often be seen on the steles of Asia Minor. According to her "This motif was associated with prayer and the expression of pain, relating to scenes of mourning and accompanying the deceased" (p. 45, 91, 176). However, there is something more to it. According to Angelos Chaniotis "the raising of both hands is a ritual gesture widely diffused in ancient iconography and in different contexts: invocations, prayers and imprecations"[10] Additionally, I would add this, the gesture also has an apotropaic character.

The steles of Viminacium decorated with lions (cat. nos. 40–48) bear a close relationship to the Pannonian–Norican style reliefs with similar decorations, explains the author (pp. 41–43). Pilipović is certainly right about this, but I just want to draw attention to the fact that the role of three-dimensional lion-statues and lion-reliefs on the graves in Asia Minor (particularly in Phrygia) is of particular importance. Lions are primarily related to the Kybele-Attis cult, as the author states, in which these beasts were the animal companions of the named deities. The cult of Kybele-Attis was widespread in the West as well.[11] A comparison of certain iconographic motifs with the epigraphic monuments of Asia Minor (especially Central Anatolia) would be worth further investigation. Hypothetically, the ox head and triangle with eagle (cat. no. 3); the crescent moon (cat. no. 4); and the vine branches with grapes (cat. nos. 12, 14, 16, 20, 26, 31, etc.) would be worth further research. For instance, Mēn is a local deity worshipped in Phrygia and Lycaonia. His most characteristic symbol is the crescent moon, either alone or behind his shoulders; as the moon-god, Mēn was linked with the underworld, agricultural fertility, and the protection of tombs.[12] The vine and grapes are also very popular on Central Anatolian funerary reliefs, which is usually interpreted in two ways: as a Dionysiac motif or a sign of the Christian belief, and the author herself refers to these possibilities.[13]

Romans were generally proud of their occupation, which was often depicted on their tombstones. These are extremely interesting and important sources for learning about everyday life in the Roman world. At Viminacium, there are two important reliefs connected with the occupation of the deceased: one is a scene of a travelling speculator (cat. no. 27),[14] which is quite a famous funerary relief, already interpreted by Michael Rostovtzeff and András Alföldi respectively. According to Rostovtzeff, the central relief is a *cursus publicus* scene: the *speculator* travelling as a courier with his servant who holds a *beneficiarius* spear. Alföldi saw the purpose of the journey differently. He believed it to have been to pressurise the local population into selling supplies for the army, and emphasised that the *beneficiarius* spear held by the servant was a symbol of sovereign imperial power. Subsequently the monument received attention in studies devoted to other issues, such as Zsolt Mráv's study on tombstones with depictions of carriages and insignia of the *beneficiarii*. The other remarkable relief is a scene in which a banker counts money in a luxurious ambient ("Kontorenszene", cat. no. 38). This scene is particularly interesting because one of the moneyers holds a triptych in his hand, while the other holds an open papyrus-scroll.[15]

In summary, Sanja Pilipović's recently published corpus, through the petrological, linguistic, and iconographic examination of the sixty-nine funerary steles discussed in it, inserted Viminacium into a network that showed that Upper Moesia was an open society, where, in addition to the natives, immigrants from the Danube provinces, from Asia Minor and the Middle East also settled, bringing their own culture with them. In this way, Pilipović's volume not only significantly contributes to the scientific processing of the history of Viminacium, but also serves as useful reading for anyone who, beyond the nuances of Latin epigraphy, wants to catch a glimpse of the real world of the Roman Empire.

Tibor GRÜL

---

[1] Mócsy, András: *Pannonia and Upper Moesia. A History of the Middle Danube Provinces of the Roman Empire*. London, Routledge, 1974.

[2] Đurić, Bojan, and Müller, Harald W.: White marbles in Noricum and Pannonia: an outline of the Roman quarries and their products. In: Philippe Jockey (ed.): *LEUKOS LITHOS. Marbres et autres roches de la Méditerranée antique: études interdisciplinaires*. Paris: Maisonneuve & Larose, Maison méditerranéenne des sciences de l'homme, 2009, 111–127.

[3] Russell, Ben: *The Economics of the Roman Stone Trade*. Oxford: Oxford University Press, 2013.

[4] The quaternary travertine of the Budakalász quarry has been meticulously studied in the past decade, see e.g., Đurić, Bojan; Kele, Sándor and Rižnar, Igor: The Budakalász travertine production. In: *ASMOSIA XI, Interdisciplinary Studies on Ancient Stone, Proceedings of the XI International Conference of ASMOSIA*. Split: University of Split, Arts Academy in Split, 2018, 545–556; and especially: Đurić, Bojan: The Logistics Behind Ancient Art. The Case of Noricum and Pannoniae. In: Barbara Porod and Peter Scherrer (eds.): *Akten des 15. Internationalen Kolloquiums zum Provinzialrömischen Kunstschaffen Der Stifter und sein Monument Gesellschaft – Ikonographie – Chronologie 14. bis 20. Juni 2017 Graz*. Graz: Universalmuseum Joanneum, 2019, 8–38 (with detailed maps and charts on the distribution of stones over Noricum, Pannonia and Moesia).

[5] This quarry was discovered in the 19th century by Hungarian researchers: Téglás, Gábor: Római márványbánya a Bisztravölgyben, Bukova Hunyad-Megyei falu határán [Roman marble quarry in the Bistra Valley, at Bukova village in the Hunyad county]. *Archaeologiai Közlemények* 14 (1886) 123–136, see also Barbu, Marius Gheorghe: Cariera romană de exploatare a calcarului de la Rapoltu Mare, jud. Hunedoara. *Sargetia. Acta Musei Devensis* 5 (2014) 77–85.

[6] Kremer, Gabrielle: Mythologie und Grabarchitektur am Beispiel der römerzeitlichen Grabbauten in Noricum und Pannonien. In: V. M. Kokole, B. Murovec, M. Šašel Kos, und M. Talbot (hrsg.): Metoda Kokole et al. (eds.): *Mediterranean Myths from Classical Antiquity to the Eighteenth Century*. Ljubljana: Založba ZRC, 2006, 37–52.

[7] This particular relief was analysed by Bebina Milovanović and Nemanja Mrđić: The She-Wolf Motif with Romulus and Remus on a Tomb Stela of an Augustal from Viminacium. *Bolletino di Archaeologia Online* 330 (2008) 90–94; cf. Rissanen, Mika: The Lupa Romana in the Roman provinces. *Acta Archaeologica* 65:2 (2014) 335–360, on the map showing *lupa*-representations it is clearly seen that this iconographic motif was known *only* in Pannonia, Dacia, and Moesia, and in some places along the Rhine.

[8] András Mócsy argued that Pannonia was far behind the other provinces of the empire, and the lack of native divine names in the epigraphic material – with the sole exception of Teutates – can be explained by the lack of Romanisation (A. Mócsy: The Civilized Pannonians of Velleius. In: Brian Hartley and John Wacher (eds.): *Rome and Her Northern Provinces*. Gloucester: Alan Sutton, 1983, 169–178). On the other hand, Géza Alföldy's opinion was that the lack of indigenous divine names proves the profound Romanisation of Pannonian society. According to him, this is also evident from the numerous monuments that prove the popularity of the Aeneas and Romulus story in Pannonia (Pannonia és a Római Birodalom. *Debreceni Szemle* 4:2 (1996) 172–183).

[9] This type of funerary monument, which was also very popular in Noricum and Pannonia, usually represents a couple: the husband wears a Roman toga, while his wife is wearing clothes and jewels characteristic of Celtic tribes. These representations were clearly expressions of ethnic and cultural identity, see Kremer, Gabrielle: Die norisch-pannonischen Grabbauten als Ausdruck kultureller Identität? in: A. Schmidt-Colinet (Hrsg.): *Lokale Identitäten in Randgebieten des Römischen Reiches. Akten des Internationalen Symposiums in Wiener Neustadt 2003*. Wien: Phoibos, 2004, 147–159. – For the archaeological remains of clothing at Viminacium, see Raičković, Angelina, and Milovanović, Bebina: Development and changes in Roman fashion. Showcase Viminacium. *Arheologija i Prirodne Nauke* 6 (2010) 77–106.

[10] Chaniotis, Angelos: Ritual performances of divine justice: the epigraphy of confession, atonement, and exaltation in Roman Asia Minor. In: Hannah M. Cotton, Robert G. Hoyland, Jonathan J. Price, and David J. Wasserstein (eds.): *From Hellenism to Islam Cultural and Linguistic Change in the Roman Near East*. Cambridge: Cambridge University Press, 2009, 115–153, esp. 126.

[11] See *CCCA = Corpus Cultus Cybelae Attidisque* (*EPRO* 50/6, ed. Vermaseren, Leiden. Brill, 1989), pp. 30–39 (Pannonia); pp. 95–112 (Thracia); pp. 113–139 (Moesia); pp. 140–146 (Dacia). For the Central Balkans see also Gavrilović-Vitas, Nadežda: *Ex Asia et Syria: Oriental Religions in the Roman Central Balkans*. Oxford: Archaeopress, 2021, 49–75.

[12] See Lane, Eugene N.: The Iconography of Men. In: *Corpus monumentorum religionis dei Menis (CMRDM). Volume 3: Interpretations and Testimonia*. Leiden: Brill, 1976, 99–108. For the Central Balkans see also Gavrilović-Vitas, Nadežda: *Ex Asia et Syria: Oriental Religions in the Roman Central Balkans*. Oxford: Archaeopress, 2021, 123–129.

[13] Anđelković-Grašar, Jelena; Nikolić, Emilija and Rogić, Dragana: 'Tomb with cupids' from Viminacium: A contribution to research of construction, iconography and style. *Starinar* 63 (2013) 73–100, esp. 89–90.

[14] The author of the book has already published a paper on this scene: Pilipović, Sanja: A Travelling Speculator (CIL III 1650): A Glimpse of the Everyday Life of the Principales through the Window of Roman Funerary Art. *Balcanica* 47 (2016) 7–24. – For a general introduction to this topic, see Zimmer, Gerhard: *Römische Berufsdarstellungen* (Archäologische Forschungen, 12.) Bonn: Mann, 1982.

[15] Meyer, Elizabeth A.: *Legitimacy and Law in the Roman World: Tabulae in Roman Belief and Practice*. Cambridge University Press, 2004; Wolf, Joseph Georg: Documents in Roman Practice. In: David Johnston (ed.): *The Cambridge Companion to Roman Law*. Cambridge: Cambridge University Press, 2015, 61–84. – Of course, these representations cannot be used directly to determine the level of literacy. On the other hand, the seal boxes clearly refer to this, of which 32 have been found at Viminacium so far, see Milovanović, Bebina, and Raičković-Savić, Angelina: Seal boxes from the Viminacium site. *Starinar* 63 (2013) 219–236.

Chiara Cecalupo, Stefan Heid (eds), CENTO ANNI DEL PONTIFICIO ISTITUTO DI ARCHEOLOGIA CRISTIANA. DISCIPLINE E DOCENTI, Pontificio istituto di archeologia cristiana, Città del Vaticano 2023. (152 pages, 62 illustrations, Appendices 1 and 2, Abbreviations, Index)

On the eve of its significant jubilee, marking a century of unwavering existence (*Centenario di fondazione* 1925–2025), the Pontifical Institute of Christian Archaeology (PIAC) in Rome pays tribute to its foundation by organising thematic scientific meetings and exhibitions, and publishing special and occasional editions.[1] The monograph, which sheds light on the scientific and educational path of the Institute, in its almost hundred years of existence, provides an overview of the scientific disciplines, which were carefully nurtured at this prestigious institution, with the presentation of eminent lecturers who passed on their knowledge and experience to generations of students. The authors of the chapters are active lecturers and professors-*emeriti* of this institution. The book is dedicated to the Grand Chancellor, Sua Eminenza Cardinale José Tolentino de Mendonca, and the editorial task was undertaken by Chiara Cecalupo, professor in charge of the Introduction to the Studies of Archaeology and Museology, and Stefan Heid, rector of the Pontifical Institute and professor of hagiography and the history of the Christian cult. The book is printed in Italian and, in addition to the Introduction, contains 11 chapters, which meticulously trace the evolution of the Institute's disciplines, highlighting the educational endeavours of its devoted lecturers. The concluding chapters are enriched with two Appendices in Latin and Italian, a list of abbreviations, and a useful Name Index.

The editors of the publication present the Institute with a short introduction, providing information about the institution's origins, goals, and tasks. The idea to establish an institution for the scientific study of material and written traces from the period of ancient and early medieval Christianity originated from the Holy See during the time of Pope Benedict XV (1914–1922).

However, it was eventually realised during the papacy of Pope Pius XI (1922–1939), a period marked by significant tension between the Vatican and the Italian government, later regulated by the Lateran Treaty in 1929. The PIAC as an academic institution was inaugurated on December 11, 1922, coinciding with the day of Pope Damasus (366–384), a significant figure from Rome's early Christian past.

Since its establishment, the PIAC has served as an academic training ground for archaeologists specialising in the early Christian period from around the world. Courses, led by 45 lecturers, have been attended by more than 1,500 students to date. The PIAC operates as an autonomous institution, equivalent to a faculty, catering to graduate archaeologists, art historians, theologians, and individuals with similar profiles. Upon completing a two- or three-year education, participants receive a license or a doctorate in Christian archaeology. In addition to mandatory courses, students engage in a series of field research activities, including visits to the most significant monuments and sites of the early Christian period. This includes exploring the catacombs and early churches of the city of Rome, as well as sites in other countries and regions.

Throughout its history, the PIAC has conducted its teaching through various primary and auxiliary disciplines, introduced to the Institute through a Regulation (1925) and three Statutes (1936, 1974, and 1991). The monograph provides a detailed account of the disciplines that have shaped the academic landscape, illustrating how different areas of research have contributed to the richness of the university's *curriculum* and to providing a more comprehensive understanding of early Christian communities and their material and written sources.

The discipline of the introduction to Christian archaeology ("Introduzione all'archeologia cristiana") was presented by Chiara Cecalupo, who emphasises that it is one of the oldest courses, recalling the work of the first lecturer and rector, Johann Peter Kirsch (1926–1940), who taught a general introduction to the studies of early Christianity. Topography of Christian necropolises ("Topografia dei cimiteri cristiani") was presented by Vincenzo Fiocchi Nicolai, the successor of the great scholar Umberto M. Fasola (1970–1987).[2] He highlighted that, from the earliest period, significant attention was given to ancient Christian necropolises, especially catacombs. Regular visits to these subterranean structures were an integral part of the study programme, and the subject of much archaeological and epigraphical research within the PIAC programme, in cooperation with the *Pontificia Commissione di Archeologia Sacra* (PCAS). Lucrezia Spera wrote about the topography of Christian Rome ("Topografia di Roma cristiana") and emphasised that over the decades it was not a separate study programme, but rather lessons within the courses dedicated to necropolises and early Christian churches. "Topograpfia dell'*Orbis christianus antiquus*", presented by Philippe Pergola, belonged to the younger disciplines, and became a primary course in 1974. It experienced a particular boost from the IX Congress of Christian Archaeology (CIAC) in Rome in 1975, broadening its horizons to new topics not traditionally covered in the archaeology of the early Christian era.

Ancient Christian architecture ("Architettura cristiana antica"), introduced by Olof Brandt, the successor of Federico Guidobaldi (1993–2012), also was not a separate discipline but was studied through several courses. It primarily focused on the churches of ancient Rome and later expanded to include the sacral architecture of the East.

Since the founding of the PIAC, significant attention has been devoted to classical and early Christian epigraphy. Giuseppe Falzone and Danilo Mazzoleni document the development of the department in the contribution "Epigrafia classica e cristiana". Thanks to the remarkable advance made at the end of the 19th century, when the "*primus* among Christian archaeologists", Giovanni Battista de Rossi (1822–1894), published two volumes of "*Inscriptiones Christianae Vrbis Romae septimo saeculo antiquiores*" (*ICVR*), covering dated inscriptions from the 7th to the 15th centuries, work on this corpus continued through the publication within the "*Nova series*", which also includes the oldest Christian inscriptions and *instrumentum*. The series is led by professors and collaborators of the PIAC and today, that project has largely come to an end, with 10 volumes having been published by 1992, and one more in preparation.

Christian iconography ("Iconografia cristiana") is a subject that has been taught at the PIAC since 1926, as noted by Cecilia Proverbio, successor to the late, eminent lecturer Fabrizio Bisconti (1994–2022). The first lecturer, Joseph Wilpert (1926–1935), is well-known to the international academic community for the four-volume publication "*Die römischen Mosaiken und Malereien der kirchlichen Bauten vom 4. bis 13. Jahrhundert*" (Freiburg i.Br. 1916–1924). He has been particularly cited in the Serbian archaeological community, especially in the second half of the 20th century.

History of the Christian cult and hagiography ("Storia del culto Cristiano e agiografia"), written by Stefan Heid, provides a *curriculum* on the development of the course and its lecturers. It is one of the fundamental disciplines at the PIAC, along with patrology ("Patrologia"), introduced as a subject in 1937, which is discussed by the current lecturer Carlo dell'Osso. During the studies, special attention is given to fieldwork methodology ("Tecnica degli scavi"), presented by Gabriele Castiglia, who recalls that the department intermittently conducted a series of national and international archaeological field research, in which its teachers and students were active participants. Museology ("Museologia"), as one of the very important disciplines, due to the corpus of finds, documentation, and numerous institutional and private collections, provides an essential link in the education of early Christian archaeologists, as noted by Carla Salvetti.

The book is a valuable resource for experts in early Christian archaeology, as it contains not only significant information about specific disciplines and the researchers who laid the foundation for their development but also very useful bibliographical references. The publication will be of particular importance to historians of the discipline, providing insight into a university realm that has operated, and continues to function, in different socio-economic and challenging circumstances.

The PIAC is a renowned institution in the archaeology of the early Christian period, serving as a global hub of knowledge that emphasises the study of all aspects of the development of Christianity and early Christian communities. Early Christian archaeology is not universally recognised as a separate scientific field in many academic circles; it is often classified within the framework of Roman provincial archaeology or the archaeology of the early Middle Ages, which is also the current posi-

tion at Belgrade University. An institution like the PIAC, which nurtures the unique research focus presented in this monograph, could serve as a model for the development of other institutions or research groups with a similar thematic orientation.

Translated by the author
Gordana JEREMIĆ

[1] For more information about the PIAC, see: https://www.piac.it/ (accessed on November 15, 2023)

[2] For comprehensive biographies and bibliographies of the early Christian archaeology researchers, consult: S. Heid, M. Dennert (Hrsg.), *Personenlexikon zur Christlichen Archäologie. Forscher und Persönlichkeiten vom 16. bis zum 21. Jahrhundert*, Bd. I-II, Regensburg 2012.

EDITORIAL POLICY OF THE JOURNAL *STARINAR*

The journal *Starinar* is dedicated to topics in the areas of archaeology, history, history of arts, architecture and similar scholarly disciplines.

The journal *Starinar* started to be published in 1884 as a periodical publication issued by the Serbian Archaeological Society, and in 1950 it became the periodical of the Institute of Archaeology in Belgrade.

The journal *Starinar* publishes original papers that have not been published previously: original scientific articles, excavation reports, scientific reviews, book reviews, critiqical reviews, bibliographies, necrologies. Some issues of *Starinar* can be dedicated to emeritus researchers in the field of archaeology.

Starinar is an Open Access journal.

Articles can be submitted in English, German or French. If the paper is written in English, summary can be in Serbian (for authors from Serbia) or English (for international authors), while articles submitted in German or French need to have a summary in English.

Papers for *Starinar* have to be submitted to the editorial secretary and must be formatted in accordance with the Guidelines/ Submission instructions for authors.

The Journal is issued once a year.

Online First option is applied in *Starinar*: an electronic version of an accepted manuscript is made available online after the Editorial Board accepts the manuscript for publishing and after the editing and proofreading procedure.

Journal *Starinar* publishes articles from the fields of archaeology, history, architecture, history of arts, classical philology, physical anthropology, etc.

EDITORIAL RESPONSIBILITIES

The Editorial Board is responsible for deciding which articles submitted to ***Starinar*** will be published. The Editorial Board is guided by the Editorial Policy and constrained by legal requirements in force regarding libel, copyright infringement and plagiarism.

The Editorial Board reserves the right to decide not to publish submitted manuscripts in case it is found that they do not meet relevant standards concerning the content and formal aspects. The Editorial Staff will inform the authors whether the manuscript is accepted for publication within 120 days from the date of the manuscript submission.

Editorial Board must hold no conflict of interest with regard to the articles they consider for publication. If an Editor feels that there is likely to be a perception of a conflict of interest in relation to their handling of a submission, the selection of reviewers and all decisions on the paper shall be made by the editor and editorial board.

Editorial Board shall evaluate manuscripts for their intellectual content free from any racial, gender, sexual, religious, ethnic, or political bias.

The Editor and the Editorial Staff must not use unpublished materials disclosed in submitted manuscripts without the express written consent of the authors. The information and ideas presented in submitted manuscripts shall be kept confidential and must not be used for personal gain.

The journal Starinar applies the system of double-blind peer review. Editors and the Editorial Staff shall take all reasonable measures to ensure that the reviewers remain anonymous to the authors before, during and after the evaluation process and the authors remain anonymous to reviewers until the end of the review procedure.

Papers prepared for publishing should be submitted to the editorial secretary between 20 November to 20 December of the current year for the volume that will be published the following year. The Editorial board meets after the submission of all papers. At the first meeting, reviewers are selected and assigned manuscripts for review.

AUTHORS' RESPONSIBILITIES

Authors warrant that their manuscript is their original work, that it has not been published before and is not under consideration for publication elsewhere. Parallel submission of the same paper to another journal constitutes a misconduct and eliminates the manuscript from consideration by *Starinar*.

The Authors also warrant that the manuscript is not and will not be published elsewhere (after the publication in Starinar) in any other language without the consent of the Publisher.

In case a submitted manuscript is a result of a research project, or its previous version has been presented at a conference in the form of an oral presentation (under the same or similar title), detailed information about the project, the conference, etc. shall be provided in front of the first footnote and it should be marked with a star. A paper that has already been published in another journal cannot be reprinted in Starinar.

It is the responsibility of each author to ensure that papers submitted to *Starinar* are written with ethical standards in mind. Authors affirm that the article contains no unfounded or unlawful statements and does not violate the rights of third parties. The Publisher will not be held legally responsible should there be any claims for compensation.

Reporting standards

A submitted manuscript should contain sufficient detail and references to permit reviewers and, subsequently, readers to verify the claims presented in it. The deliberate presentation of false claims is a violation of ethical standards. Book reviews, critical reviews, necrologies and other professional articles are reviewed as well and the decision on their acceptance or rejection is made by the Editorial Board based on reviews.

Authors are exclusively responsible for the contents of their submissions and must make sure that they have permission from all involved parties to make the data public.

Authors wishing to include figures, tables or other materials that have already been published elsewhere are required to obtain permission from the copyright holder(s). Any material received without such evidence will be assumed to originate from the authors.

Authorship

Authors must make sure that all only contributors who have significantly contributed to the submission are listed as authors and, conversely, that all contributors who have significantly contributed to the submission are listed as authors. If persons other than authors were involved in important aspects of the research project and the preparation of the manuscript, their contribution should be acknowledged in a footnote or the Acknowledgments section.

Acknowledgment of Sources

Authors are required to properly cite sources that have significantly influenced their research and their manuscript. Information received in a private conversation or correspondence with third parties, in reviewing project applications, manuscripts and similar materials, must not be used without the express written consent of the information source.

Plagiarism

Plagiarism, where someone assumes another's ideas, words, or other creative expression as one's own, is a clear violation of scientific ethics. Plagiarism may also involve a violation of copyright law, punishable by legal action.

Plagiarism includes the following:

– Word for word, or almost word for word copying, or purposely paraphrasing portions of another author's work without clearly indicating the source or marking the copied fragment (for example, using quotation marks);
– Copying equations, figures or tables from someone else's paper without properly citing the source and/or without permission from the original author or the copyright holder.

Please note that all submissions are thoroughly checked for plagiarism. Any paper which shows obvious signs of plagiarism will be automatically rejected and authors will be temporary permitted to publish in Starinar.

In case plagiarism is discovered in a paper that has already been published by the journal, it will be retracted in accordance with the procedure described below under Retraction policy, and authors will be temporary permitted to publish in Starinar.

Conflict of interest

Authors should disclose in their manuscript any financial or other substantive conflict of interest that might have influenced the presented results or their interpretation.

Fundamental errors in published works

When an author discovers a significant error or inaccuracy in his/her own published work, it is the author's obligation to promptly notify the journal Editor or publisher and cooperate with the Editor to retract or correct the paper.

By submitting a manuscript the authors agree to abide by the *Starinar*'s Editorial Policies.

REVIEWERS' RESPONSIBILITIES

Reviewers are required to provide written, competent and unbiased feedback in a timely manner on the scholarly merits and the scientific value of the manuscript.

The reviewers assess manuscript for the compliance with the profile of the journal, the relevance of the investigated topic and applied methods, the originality and scientific relevance of information presented in the manuscript, the presentation style and scholarly apparatus.

Reviewers should alert the Editor to any well-founded suspicions or the knowledge of possible violations of ethical standards by the authors. Reviewers should recognize relevant published works that have not been cited by the authors and alert the Editor to substantial similarities between a reviewed manuscript and any manuscript published or under consideration for publication elsewhere, in the event they are aware of such. Reviewers should also alert the Editor to a parallel submission of the same paper to another journal, in the event they are aware of such.

Reviewers must not have conflict of interest with respect to the research, the authors and/or the funding sources for the

research. If such conflicts exist, the reviewers must report them to the Editor without delay.

Any selected referee who feels unqualified to review the research reported in a manuscript or knows that its prompt review will be impossible should notify the Editor without delay.

Reviews must be conducted objectively. Personal criticism of the author is inappropriate. Reviewers should express their views clearly with supporting arguments.

Any manuscripts received for review must be treated as confidential documents. Reviewers must not use unpublished materials disclosed in submitted manuscripts without the express written consent of the authors. The information and ideas presented in submitted manuscripts shall be kept confidential and must not be used for personal gain.

PEER REVIEW

The submitted manuscripts are subject to a peer review process. The purpose of peer review is to assists the Editorial Board in making editorial decisions and through the editorial communications with the author it may also assist the author in improving the paper.

To every paper submitted to editorial board of Starinar two reviewers are assigned. Reviewers could be members of the Editorial Board, associates of the Institute of Archaeology or eternal associates, with the same or higher scientific degree as the author(s), competent in the field of the manuscript's topic. The suggestions on who the reviewers should be are made by the Editorial Board, and adopted by the Editor-in-Chief.

All papers are reviewed by using the double-blind peer review system: the identity of the author is not known to the reviewers and vice versa. Reviewers shall send their reviews within the period of 30 days after the receipt of the manuscript. Reviewers are not paid for this work.

If a reviewer requires a revision of a manuscript, authors shall send a revised version with changes made in accordance with the reviewer's suggestions within the period of 30 days. In case they consider the revision request unfounded, the authors should send their arguments explaining why they did not make the required revision. The same timeframe applies to revisions of manuscripts that are not written in accordance with the author guidelines.

The decision of acceptance of the paper is made by the Editorial Board of Starinar by majority vote based on the peer reviews and the evaluation of the authors' revision or their arguments, if they did not make changes to the manuscript.

After the final decision on the content of a volume is made, manuscripts are sent for editing and proofreading, and then to a graphic designer, who is responsible for computer layout, design and prepress. Before printing, the authors will have the opportunity to proofread their paper twice in the PDF format. The final approval for printing is given by the Editor-in-Chief. The whole volume should be send to the printing press by 1 October.

The reviewers selected by the Editorial Board, receive a peer review form with questions that they should answer. The purpose of the questions is to indicate all aspects that they should consider in order to make a decision on the destiny of a paper. In the final part of the form, reviewers are supposed to write their opinion and suggestions how to improve the paper. The identity of reviewers is unknown to authors, before, during and after the review procedure. The identity of authors is unknown to reviewers before, during and after the review procedure (until the paper is published). It is suggested to authors to avoid formulations that could reveal their identity. The Editorial Board shall ensure that before sending a paper to a reviewer, all personal details of the author (name, affiliation, etc.) will be deleted and that all measures will be undertaken in order to keep the author's identity unknown to the reviewer during the review procedure.

The choice of reviewers is at the Editorial Board's discretion. The reviewers must be knowledgeable about the subject area of the manuscript; and they should not have recent joint publications with any of the authors.

All of the reviewers of a paper act independently and they are not aware of each other's identities. If the decisions of the two reviewers are not the same (accept/reject), the Editor may assign additional reviewers.

During the review process Editor may require authors to provide additional information (including raw data) if they are necessary for the evaluation of the scholarly merit of the manuscript. These materials shall be kept confidential and must not be used for personal gain.

The Editorial team shall ensure reasonable quality control for the reviews. With respect to reviewers whose reviews are convincingly questioned by authors, special attention will be paid to ensure that the reviews are objective and high in academic standard. When there is any doubt with regard to the objectivity of the reviews or quality of the review, additional reviewers will be assigned.

PROCEDURES FOR DEALING WITH UNETHICAL BEHAVIOUR

Anyone may inform the editors and/or Editorial Staff at any time of suspected unethical behaviour or any type of misconduct by giving the necessary information/evidence to start an investigation.

Investigation

- Editor-in-Chief will consult with the Editorial Board on decisions regarding the initiation of an investigation.
- During an investigation, any evidence should be treated as strictly confidential and only made available to those strictly involved in investigating.
- The accused will always be given the chance to respond to any charges made against them.
- If it is judged at the end of the investigation that misconduct has occurred, then it will be classified as either minor or serious.

Minor misconduct

Minor misconduct will be dealt directly with those involved without involving any other parties, e.g.:

- Communicating to authors/reviewers whenever a minor issue involving misunderstanding or misapplication of academic standards has occurred.
- A warning letter to an author or reviewer regarding fairly minor misconduct.

Major misconduct

The Editor-in-Chief, in consultation with the Editorial Board, and, when appropriate, further consultation with a small group of experts should make any decision regarding the course of

action to be taken using the evidence available. The possible outcomes are as follows (these can be used separately or jointly):

- Publication of a formal announcement or editorial describing the misconduct.
- Informing the author's (or reviewer's) head of department or employer of any misconduct by means of a formal letter.
- The formal, announced retraction of publications from the journal in accordance with the Retraction Policy (see below).
- A ban on submissions from an individual for a defined period.
- Referring a case to a professional organization or legal authority for further investigation and action.

When dealing with unethical behaviour, the Editorial Staff will rely on the guidelines and recommendations provided by the Committee on Publication Ethics (COPE): http://publicationethics.org/resources/.

RETRACTION POLICY

Legal limitations of the publisher, copyright holder or author(s), infringements of professional ethical codes, such as multiple submissions, bogus claims of authorship, plagiarism, fraudulent use of data or any major misconduct require retraction of an article. Occasionally a retraction can be used to correct errors in submission or publication. The main reason for withdrawal or retraction is to correct the mistake while preserving the integrity of science; it is not to punish the author.

Standards for dealing with retractions have been developed by a number of library and scholarly bodies, and this practice has been adopted for article retraction by Starinar: in the electronic version of the retraction note, a link is made to the original article. In the electronic version of the original article, a link is made to the retraction note where it is clearly stated that the article has been retracted. The original article is retained unchanged, save for a watermark on the PDF indicating on each page that it is "retracted."

OPEN ACCESS POLICY

Starinar is an Open Access Journal. All articles can be downloaded free of charge and used in accordance with the licence Creative Commons – Attribution-NonCommercial-No Derivs 3.0 Serbia (https://creativecommons.org/licenses/by-nc-nd/3.0/rs/). The submission, review and publishing procedures are free of charge.

Self-archiving Policy

The journal *Starinar* allows authors to deposit the accepted, reviewed version of the manuscript, as well as final, published PDF version of the paper in an institutional repository and non-commercial subject-based repositories, or to publish it on Author's personal website (including social networking sites, such as ResearchGate, Academia.edu, etc.) and/or departmental website, and in accordance with the licence Attribution-NonCommercial-NoDerivs 3.0 Serbia (http://creativecommons.org/licenses/by-nc-nd/3.0/rs/), at any time after publication. Full bibliographic information (authors, article title, journal title, volume, issue, pages) about the original publication must be provided and a link must be made to the article's DOI.

Copyright

Once the manuscript is accepted for publication, authors shall transfer the copyright to the Publisher.

Authors grant to the Publisher the following rights to the manuscript, including any supplemental material, and any parts, extracts or elements thereof:

- the right to reproduce and distribute the Manuscript in printed form, including print-on-demand;
- the right to produce prepublications, reprints, and special editions of the Manuscript;
- the right to translate the Manuscript into other languages;
- the right to reproduce the Manuscript using photomechanical or similar means including, but not limited to photocopy, and the right to distribute these reproductions;
- the right to reproduce and distribute the Manuscript electronically or optically on any and all data carriers or storage media – especially in machine readable/digitalized form on data carriers such as hard drive, CD-Rom, DVD, Blu-ray Disc (BD), Mini-Disk, data tape – and the right to reproduce and distribute the Article via these data carriers;
- the right to store the Manuscript in databases, including online databases, and the right of transmission of the Manuscript in all technical systems and modes;
- the right to make the Manuscript available to the public or to closed user groups on individual demand, for use on monitors or other readers (including e-books), and in printable form for the user, either via the internet, other online services, or via internal or external networks.

DISLAIMER

The views expressed in the published works do not express the views of the Editors and Editorial Staff. The authors take legal and moral responsibility for the ideas expressed in the articles. Publisher shall have no liability in the event of issuance of any claims for damages. The Publisher will not be held legally responsible should there be any claims for compensation.

SUBMISSION INSTRUCTIONS FOR THE *STARINAR* JOURNAL

By applying the new rules (Acta) for publishing activities issued by the Institute of Archaeology, Belgrade and in accordance with the editorial policy of the Starinar journal, the editorial board of the Starinar journal have decided to improve its quality and, thus, contribute to its full integration into the international system of exchanging scientific information.

The Starinar journal is dedicated to topics from the scientific areas of archaeology, history, history of arts, architecture and similar scientific disciplines.

The Starinar journal publishes original papers that have not been previously published: original scientific articles, excavation reports, scientific reviews, book reviews, critiques, bibliographies and necrologies.

Articles can be submitted in English, German or French. If the paper is written in English, the summary can be written in Serbian (for authors from Serbia) or English (for foreign authors), while articles submitted in German or French need to have the summary in English.

Articles submitted to the Starinar editorial board must contain customary data. Each article should therefore include: title; author's forename and surname; affiliation; abstract; key words; main text; summary; graphic images with list of captions; bibliography; contact details.

---

1. The title should be short and clear, reflecting as much as possible the content of the article. The title should include words which are easy to index and search for. If there are no such words integrated into the title, it is preferable to have an added subtitle. The title should appear in either the fifth or sixth row under the upper margin, in bold, with a font size of 14 pts.

2. The author or authors should include their full names.

3. The author or authors should write the official name and address of the institution they represent, together with, where applicable, the official name and address of the location where they performed their research. With complex institutions, all names should be included (e.g. University of Belgrade, Philosophical Faculty, Department of Archaeology, Belgrade).

4. The abstract represents a short overview of the article (100–250 words). It is advisable for this to contain words which are easy to index or search for. The abstract should offer data about the research goal, method, results and conclusion. Abstracts should be written in the same language as the article (English, German or French). It is necessary to use correct grammar and spelling and to have the document reviewed by a qualified native proof-reader.

5. The key words should include words or phrases that effectively describe the content of the article, and which are easy to index and search for. They should be selected according to an internationally recognised source (index, vocabulary, and thesaurus), such as the list of key words Web of Science. The number of key words should not exceed ten.

6. Articles should be no longer than 32 DIN A4 pages, including footnotes and illustrations. The body text should be written digitally, using Times New Roman or Arial font (font size 12 pts), MS Office Word 97 or later, with a line spacing of 1.5 and margins set to 2.54 cm. The body text must not contain illustrations. Illustrations must be submitted as separate files.

7. Manuscripts must be submitted in English, German or French, with the author obliged to state the name of the translator and the proof-reader who checked the paper. Words, statements

and titles written in a foreign language should be written using their original spelling and, in accordance with the editor's or reviewer's suggestions, transliterated (translated) into the submission language of the manuscript.

Footnotes can be included in the main paper. They should contain less important data, required explanations and cited literature. (A separate chapter of the Submission Instructions details the required method for quoting that is to be applied when writing a paper).

8. The summary must have the same content as the abstract, only expanded, but not longer than 1/10 of the paper's overall size. It is strongly advised to write the summary in a structural form. Papers submitted in English must have the summary in Serbian (for Serbian authors) or English (for foreign authors). Papers in German or French must have the summary in English. As well as the summary text, the title of the paper, the key words and the author's affiliation should be written in the appropriate language.

9. Illustrations (photographs, tables, drawings, graphs etc.) should all be in the same format. Scanned illustrations should be in a resolution of 600 dpi, while photographs should be in a resolution of at least 300 dpi, and of a TIFF, PSD or JPG format. Illustrations are to be submitted as a separate part of the paper and should not be integrated into the basic text. Titles and captions should be submitted bilingually, where applicable, (the languages in which the paper and summary are written), and as a Word document.

10. The bibliography should include bibliographic sources (articles, monographs etc.). Within the paper it should be quoted with references in the footnotes and as a list of literature/bibliography at the end of the manuscript. The bibliography represents a part of every scientific paper, with precisely quoted bibliographical references. The list of used sources should follow a unique pattern, in a sequence based on the quoting standards determined by these instructions. The bibliography must be presented in the language and alphabet in which each source has been published. In cases when the publication is published bilingually, all data should also be written bilingually. In cases where the summary is written in another language, then the title of the summary should be written in the same language.

In the list of references: **Popović 2009** – I. Popović, Gilt Fibula with Christogram from the Imperial Palace in Sirmium (Резиме: Позлаћена фибула са христограмом из царске палате у Сирмијуму) *Starinar* LVII (2007), 2009, 101–112.

Publications published in Cyrillic, Greek or any other non Latin alphabet should be transliterated into the Latin alphabet in accordance with the standards of The American Library Association and The Library of Congress of the United States (http://www.loc.gov/catdir/cpso/roman.html), for example:

Quotation within a footnote: (Поповић 1994, 65)

In the list of references: **Поповић 1994** – И. Поповић, (прир.), *Античко сребро у Србији*, Београд 1994. (I. Popović, (prir.), *Antičko srebro u Srbiji*, Beograd, 1994.)

11. Parts of references (authors' names, title, source etc.) are to be quoted in accordance with the accepted quoting form. The most commonly quoted references are listed below:

(MONOGRAPHS)

1**. How to quote an author's books:**

a. A single author

In a footnote: (Popović 2006, 21)

In the list of references: **Popović 2006** – I. Popović, *Roma aeterna inter Savum et Danubium*, Belgrade 2006.

b. Two authors

In a footnote: (Vasić, Milošević 2000, 125)

In the list of references: **Vasić, Milošević 2000** – M. Vasić, G. Milošević. 2000. *Mansio Idimvm rimska poštanska i putna stanica kod Medveđe*, Beograd, 2000.

c. Three or more authors

In a footnote: (Petković et al. 2005, 129–131)

In the list of references: **Petković et al. 2005** – S. Petković, M. Ružić, S. Jovanović, M. Vuksan, & Z. K. Zoffmann. 2005. *Roman and Medieval Necropolis in Ravna near Knjaževac*. Belgrade, 2005.

2**. Quotation of papers in serial publication, collection of papers:**

In a footnote: (Popović 2014, 261)

In the list of references: **Popović 2014** – I. Popović, The Motif of Christogram on the Architectural Elements of the Imperial Palace in Sirmium, in: *The Edict of Serdica (AD 311). Concepts and Realizations of the Idea of Religious Toleration*, (ed.) V. Vachkova, D. Dimitrov, Sofia 2014, 261–276.

3. **How to quote prepared editions (editor, translator or preparator instead of author):**

In a footnote: (Поповић 1994, 65)

In the list of references: **Поповић 1994** – И. Поповић, (прир.), *Античко сребро у Србији*, Београд 1994. (I. Popović, (prir.), *Antičko srebro u Srbiji*, Beograd, 1994.)

4. **How to quote books without indicated author:**

In a footnote: (*Гамзиград. Касноантички царски дворац* 1983, 43)

In the list of references: ***Гамзиград. Касноантички царски дворац* 1983** – *Гамзиград. Касноантички царски дворац*, Београд 1983. (*Gamzigrad. Kasnoantički dvorac*, Beograd, 1983.)

5. Quoting several books of the same author:

a. written in different alphabets

In a footnote: (Поповић 2002, 23–26; Popović 2006, 33)

In the list of references:

Поповић 2002 – И. Поповић, *Накит са Јухора, остава или сакрални тезаурус*, Београд 2002. (I. Popović, *Nakit sa Juhora, ostava ili sakralni tezaurus*, Beograd, 2002.)

Popović 2006 – I. Popović, *Roma Aeterna inter Savum et Danubium.* Belgrade, 2006.

b. written in the same year

In a footnote: (Dawkins 1996a; 1996b)

In the list of references:

Dawkins 1996a – R. Dawkins, *Climbing Mount Improbable*, London, 1996.

Dawkins 1996b – R. Dawkins, *River out of Eden*, London, 1996.

6**. Quoting chapters or parts of books:**

In a footnote: (Кондић 1994, 66)

In the list of references: **Кондић 1994** – J. Кондић, Рановизантијско сребро, у: *Античко сребро у Србији*, И. Поповић, (ур.), Београд 1994, 65–67. (J. Kondić, Ranovizantijsko srebro, u: *Antičko srebro u Srbiji*, I. Popović, (ur.), Beograd 1994, 65–67.)

7. **Quoting chapters or parts of previously published books (as an original source):**

In a footnote: (Cicero 1986, 35)

In the list of references: **Cicero 1986** – Cicero Quintus Tullius, Handbook on canvassing for the consulship, in: *Rome: Late republic and principate*, W. E. Kaegi, P. White (eds.), vol. 2, Chicago, 1986, 33–46. Originally published in: E. Shuckburgh (trans.) *The letters of Cicero*, vol. 1, London, 1908.

8. **Quoting books which have been published on-line:**

In a footnote: (Kurland, Lerner 1987)

In the list of references: **Kurland, Lerner 1987** – Ph. B. Kurland, R. Lerner, (eds.) *The founders' Constitution*. Chicago 1987. //press-pubs.uchicago.edu/founders/, accessed (date of visit to the page)

ARTICLES FROM PRINTED PERIODICALS OR PERIODICALS PUBLISHED ON-LINE

9**. Quoting an article from a printed periodical:**

In a footnote: (Vasić 2004, 91, fig. 17)

In the list of references: **Vasić 2004** – M. Vasić, Bronze railing from Mediana. *Starinar* LIII–LIV 2004, 79–109.

10**. Quoting an article from a periodical published on-line:**

In a footnote: (Van Eijck 2009, 41)

In the list of references: **Van Eijck 2009** – D. Van Eijck, Learning from simpler times, *Risk Managemen*t, vol. 56, no 1, 2009, 40–44. http://proquest.umi.com/, accessed (date of visit to the page)

DOCTORAL AND MASTER THESES

11. **Quoting doctoral or master theses:**

In a footnote: (Ilić 2005, 25–32)

In the list of references: **Ilić 2005** – O. Ilić, *Ranohrišćanski pokretni nalazi na području dijeceze Dakije od IV do početka VII veka.* Unpublished MA thesis, University of Belgrade, 2005.

LECTURES FROM SCIENTIFIC GATHERINGS

12. **Quoting a published lecture or communication presented at a scientific gathering:**

In a footnote: (Vasić 2008, 69, fig. 3)

In the list of references: **Vasić 2008** – M. Vasić, Stibadium in Romuliana and Mediana. *Felix Romvliana 50 years of archaeological excavations*, M. Vasić (ed.), (Papers from the International Conference, October, 27–29 2003, Zaječar, Serbia), Belgrade–Zaječar 2006, 69–75.

13. **Quoting an unpublished lecture or communication presented at a scientific gathering:**

In a footnote: (Gavrilović 2004)

In the list of references: **Gavrilović 2004** – N. Gavrilović, *Interpretatio Romana* of Oriental Cults in Upper Moesia from I to IV century A.D. Paper presented at the 10th Annual meeting of the European Association of Archaeologists, September 7–12, 2004 in Lyon, France.

POPULAR MAGAZINES (PERIODICALS) AND NEWSPAPER ARTICLES

14. **Quoting an article from a popular magazine:**

In a footnote: (Јањић 2007, 32–33)

In the list of references: **Јањић 2000** – J. Јањић, Прво хришћанско знамење, *НИН*, јул 2007. (J. Janjić, Prvo hrišćansko znamenje, *NIN*, jul 2007.)

15. **Quoting an article from a newspaper:**

In a footnote: (Марковић-Штрбац 1999)

In the list of references: **Марковић-Штрбац 1999** – С. Марковић-Штрбац, Пустахије са Јухора, *Политика*, 18. септембар 1999, Одељак Култура, уметност, наука. (S. Marković-Štrbac, Pustahije sa Juhora, *Politika*, 18. septembar 1999, Odeljak Kultura, umetnost, nauka.)

ELECTRONIC DATABASES, WEB PAGES, COMMENTS etc.

16. **Quoting an electronic database** (Name of the database. Address):

In a footnote: (Pliny the Elder, Perseus Digital Library)

In the list of references: **Pliny the Elder, Perseus Digital Library** – Perseus Digital Library. http://www.perseus.tufts.edu/, accessed (date of access)

17. **Quoting documents and data taken from institutional web pages** (Name of institution. Name of document. Editor. Web site. (Date of access)):

In a footnote: (Evanston Public Library Board of Trustees)

In the list of references: **Evanston Public Library Board of Trustees** – Evanston Public Library Board of Trustees, Evanston Public Library strategic plan, 2000–2010, A decade of outreach, Evanston Public Library, http://www.epl.org/library/strategic-plan-00.html, accessed (example: June 1, 2005).

12. All of the quoted bibliography/literature is to be listed in Latin alphabetic order, by the author's surname initial or the first letter of the publication's title (in cases where the author or editor is not listed).

13. When submitting a manuscript, the author should supply his/her contact details in a separate file: the address of his/her affiliation and his/her e-mail address and telephone number. In cases where there are several authors, the contact details of the first author should only be supplied. The author is also obliged to state the specific name and code of the project within which the paper was created, along with the name of the institution(s) that financed the project. The dates of birth of all authors should be written at the end.

14. Each of the submitted scientific papers will be forwarded to anonymous reviewers by the STARINAR editorial board. For further information concerning the peer review process and the editorial board's, reviewer's and author's obligations and duties, authors can refer to the EDITORIAL POLICY OF THE STARINAR JOURNAL.

15. Papers prepared for printing should be submitted to the secretary of the editorial board in the period between 20th November and 20th December of the year prior to the year of publication of the volume. Apart from a printed version, papers must also be submitted in digital form, on a CD or via e-mail anamen96@gmail.com.

– The printed version should be arranged as follows: 1. title; 2. author's forename and surname; 3. author's affiliation; 4. abstract; 5. key words; 6. basic text; 7. Summary with translated title of the paper, author's affiliation and key words; 8. bibliography; 9. illustrative section; 10. captions (list of illustrations); 11. contact details (address, e-mail and phone number).

– The digital version should contain the following individual files: 1. a file with the six initial parts of the paper (1. title; 2. author's forename, and surname; 3. author's affiliation; 4. abstract; 5. key words; 6. basic text); 2. a file with the summary and other aforementioned data; 3. a file with quoted bibliography; 4. a file with illustrations; 5. a file with captions (bilingually, languages of text and summary); 6. a file with contact details.

Manuscripts will only be accepted if they have been written and edited according to the rules listed above in this guideline and in accordance with the document entitled Editorial Policy of the Starinar Journal. Should the author disagree with the requirements of the editorial board, and the disagreement does not concern the reviewer or proof-reader's remarks, the paper will not be printed. Changes to the content of papers after the completion of the review process are not allowed, unless the changes are to be made according to the reviewer's suggestions.

For additional explanations, please feel free to contact the secretary of the editorial board, Ana Gavrilović, mobile number +381 61 20 14 189 or by e-mail: anamen96@gmail.com.

Starinar Editorial Board

CIP – Каталогизација у публикацији
Народна библиотека Србије, Београд

902/904

СТАРИНАР Српског археолошког друштва /
уредник Снежана Голубовић. – Год. 1, бр. 1 (1884) – год. 12,
књ. 1/4 (1895) ; нови ред, год. 1, бр. 1 (1906) – год. 4, бр. 2
(1909) ; нови ред, год. 5, бр. 1/2 (1910) – год. 6, бр. 1/2 (1911) ;
трећа серија, књ. 1 (1922) – књ. 15 (1940) ; н.с., књ. 1,
год. 1 (1950) – . – Београд : Археолошки институт,
1884–1895; 1906–1909; 1910–1911; 1922–1940; 1950–
(Београд : Бирограф). – 30 cm

Годишње. – Наслов: од бр. 1 (1906) Старинар. – Друго издање
на другом медијуму: Старинар (Online) = ISSN 2406-0739
ISSN 0350-0241 = Старинар
COBISS.SR-ID 8111874

Institut Archéologique Belgrade
Volume LXXIII/2023

STARINAR



ISSN 0350-0241